UNIVERSITY OF CALIFORNIA
COLLEGE OF AGRICULTURE
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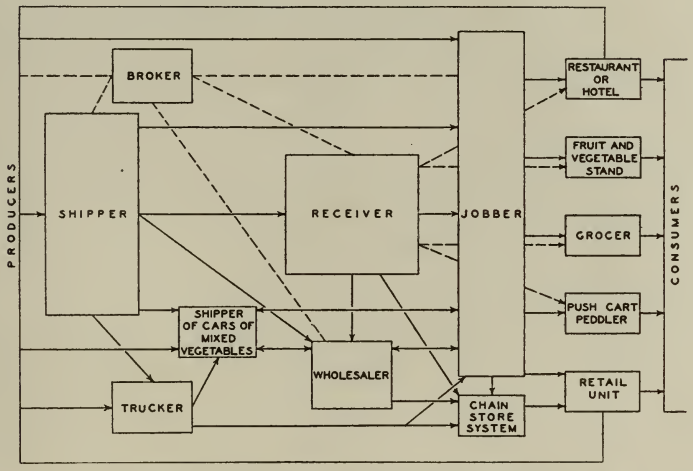
Marketing Globe Artichokes

E. A. STOKDYK



TRADE CHANNELS FOR ARTICHOKES

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MARKETING GLOBE ARTICHOKES[1]

E. A. STOKDYK[2]

INTRODUCTION

The purposes of this study were to determine possible ways and means of widening the distribution of artichokes and methods of improving conditions in the marketing process where weaknesses were found to exist.

With these purposes in view data were assembled to ascertain (1) the primary distribution of artichokes among the various cities of the United States and Canada, (2) the trade channels followed in California and other markets, (3) the trade relations that have become established between the various agencies handling artichokes, (4) the factors affecting prices in the principal markets during the major part of the artichoke shipping season, and (5) some of the reasons for the situations found in the foregoing analysis. Certain other data were obtained, such as the records of acreage and production, the status of the artichoke canning industry, and a history of the attempts which have been made by various organizations to undertake marketing functions, which would aid in an understanding of marketing practices and problems.

Since many persons are unfamiliar with the artichoke a brief description of the origin and history of the crop will be of interest.

The globe, French, bur, or Paris artichoke (*Cynara scolymus* Linn.) is a distinct species from the Jerusalem artichoke (*Helianthus tuberosus* Linn.) The edible portion of the globe artichoke consists of portions of the immature flower heads, while with the Jerusalem artichoke the edible portion consists of underground tubers. Because of their common name—artichoke—the two vegetables are often confused in the minds of those who know only one or neither of the two.

The globe artichoke is known in several countries, witness the names: artichant (French), artichoke (English), Artischoke (German), cariofo and aticioca (Italian), alcachofa (Portuguese), artisyok (Flemish), artichoke (Russian), kromart skocha (Swiss), karczochy (Polish), ardhischoke and hirschuff (Arabian), and alcance or

[1] Paper No. 29, The Giannini Foundation of Agricultural Economics.

[2] Associate Professor of Agricultural Economics, and Associate Agricultural Economist on the Giannini Foundation.

alcancil (Spanish). Le Feuvre[3] reported it growing in South America, in Argentina, Peru, Bolivia, Uruguay, Paraguay, Brazil, and Chile.

The origin of the globe artichoke is not certain, but according to De Candolle[4] the evidence both historical and observational leads to the belief that the globe artichoke is a cultivated form of the wild cardoon (*Cynara cardunculus* Linn.), commonly known as the thistle. The plant is indigenous to the area around the Mediterranean Sea west of Cypress—specifically in Madeira, in the mountains of Morocco near Mogador, in the south and east of the Iberian Peninsula, in the south of France, Italy, and Greece, and in the islands of the Mediterranean Sea as far east as Cypress and also in the Canary Islands.

Sturtevant[5] concluded, however, that the globe artichoke was not utilized as food until the Fifteenth Century. It is reported that the plant was first introduced into England in 1548. The date of the introduction of the globe artichoke into the United States is not known. Swingle and Fairchild[6] in 1899 reported that the plant had been cultivated in Louisiana for a great many years. "It is quite possible," they stated, "that the plants were originally introduced as potted suckers, or seeds may have been sown, but there is no definite record in regard to the matter." The same authors reported shipments of artichokes to the Chicago and St. Louis markets from New Orleans, and to the New York market from Florida points at that time (1899). They also stated that the crop was "somewhat extensively grown in California, especially about San Francisco."

Wellington[7] reported, in 1917, on a series of experiments with the crop in New York but gave no indication as to the importance of it to the state.

At the present time (1931), as far as could be determined through correspondence with various agencies, the commercial production of the artichoke in the United States is confined to a few California counties on the Pacific Coast.

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[3] Le Feuvre, René F. La alcachofa, cultivo jeneral—cultivo en Chile. [The artichoke, general cultivation—cultivation in Chile.] *p. 4.* Impr. de la oficiana del Tiempo, Santiago, Chile. 1906.

[4] De Candolle, Alphonse. Origin of cultivated plants. *p. 93–94.* D. Appleton and Company. 1892.

[5] Sturtevant, Lewis E. Amer. Naturalist 21:126. 1887.

[6] Swingle, Walter T., and David G. Fairchild. Bur, or globe artichokes. U. S. Dept. Agr. Cir. 22:3. 1899.

[7] Wellington, J. W. Culture of the globe artichoke. New York Agr. Exp. Sta. Bul. 435:311–319. 1917.

CALIFORNIA ACREAGE AND PRODUCTION

Detailed records on artichoke acreage and production are not available prior to the 1924–25 season. According to Mr. Frank Martini,[8] the industry was well established in the Half Moon Bay and the San Pedro Valley districts of San Mateo County in 1900, his estimate of the acreage at that time being 500 acres in the former area and 250 acres in the latter.

Klein[9] estimated the California acreage to have been approximately 1,500 acres in 1906, all of which was confined to the San Pedro Valley

TABLE 1

Acreage of Globe Artichokes in California, 1924–25 to 1930–31

County	Number of acres						
	1924–25	1925–26	1926–27	1927–28	1928–29	1929–30	1930–31
Marin	300	300	300	300	300	300	300
Monterey	3,600	4,010	4,010	3,400	3,900	3,700	3,500
San Luis Obispo	400	600	600	550	550	550	500
San Mateo	3,250	3,570	2,210	1,800	2,500	2,000	1,500
Santa Cruz	3,000	3,280	2,820	2,500	2,500	2,000	1,750
Total	10,550	11,760	9,940	8,550	9,750	8,550	7,550

Source of data: California Cooperative Crop Reporting Service. Courtesy of Mr. Carl Schiller.

and Half Moon Bay districts of San Mateo County. By 1921, however, the area devoted to artichokes had increased to 3,000 acres.[10]

Plantings were stimulated during the War when shipments from France to eastern United States markets ceased. Acreage increased rapidly and in the 1925–26 season reached a total of 11,760 acres (table 1). Since 1926, the commercial plantings have declined to approximately 7,550 acres (1930–31 season). From information obtained from growers and shippers during the period of this study indications are that the acreage will be at least 500 acres less in the 1931–32 season.

Data on the production of artichokes are not available prior to the 1924–25 season. The peak of production was reached, however, in the

[8] Statement made to the author by Mr. Frank Martini, a grower and shipper of artichokes in 1900.

[9] Klein, Jack. A coast county monopoly. California Cultivator 70:315. March 17, 1928.

[10] Hansen, C. J., and O. W. Holmes. Marketing California artichokes. U. S. Dept. Agr. Bur. Agr. Econ. and California Dept. of Agr. Division of Markets, cooperating. San Francisco. *p. 1.* April, 1928. (Mimeo.)

1925–26 season when a total of 1,470,000 boxes of 40 pounds each were produced (table 2). Since then production has declined. It has tended to vary directly with the acreage. (See fig. 1.)

ACREAGE AND PRODUCTION OF ARTICHOKES IN CALIFORNIA, 1924–25 TO 1930–31

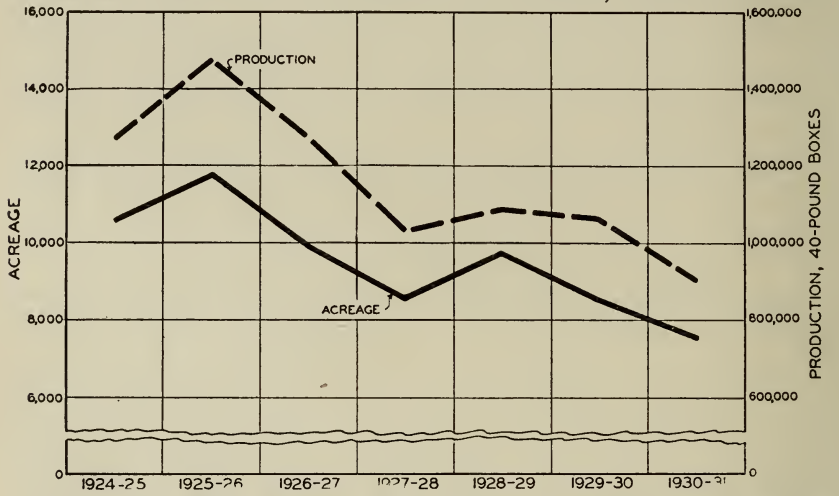

Fig. 1.—The peak of acreage and production was reached in the 1925–26 season. Since then both acreage and production have declined. Production has tended to vary directly with acreage. (Data from tables 1 and 2.)

TABLE 2

PRODUCTION OF GLOBE ARTICHOKES IN CALIFORNIA, 1924–25 TO 1930–31

Crop year	40-pound boxes
1924–25	1,266,000
1925–26	1,470,000
1926–27	1,272,000
1927–28	1,039,000
1928–29	1,082,000
1929–30	1,060,000
1930–31	900,000*

* Author's estimate based on records of fresh shipments and canners' purchases.

Source of data:
California Cooperative Crop Reporting Service. Courtesy of Mr. Carl Schiller.

The reason for the decline in acreage and production following the 1926–27 season was stated by Hansen and Holmes[11] to be that

[11] Hansen, C. J., and O. W. Holmes. Marketing California artichokes. U. S. Dept. Agr. Bur. Agr. Econ. and California Dept. of Agr. Division of Markets, cooperating. San Francisco. *p. 1.* April, 1928. (Mimeo.)

markets were not sufficiently developed to absorb such large quantities as were produced between 1925 and 1927 at prices remunerative to growers. Subsequent to the 1928–29 season, acreage has declined primarily because other crops such as lettuce, broccoli, and Brussels sprouts have been relatively more profitable.

SHIPMENTS

Prior to 1904, shipments of artichokes were confined to California markets, particularly Los Angeles and San Francisco. Small quantities were shipped in drums by express to eastern points in 1904 by Mr. Vincent Quilici, a grower. During 1905 and 1906 considerable quantities were sent by express to New York. In 1907, however, the first shipment by freight of a straight carload of artichokes to the New York market was made.[12] Shipments to eastern points increased gradually and by 1913 amounted to approximately 300 carloads and in 1914 to more than 500 carloads.[13]

TABLE 3

RAIL SHIPMENTS OF CALIFORNIA ARTICHOKES DURING THE PRINCIPAL PART OF THE SHIPPING SEASON* AS COMPILED FROM SHIPPERS' AND CARRIERS' RECORDS BY MONTHS, 1929–30 AND 1930–31

(In carloads of 504 boxes)

1929-30 season				1930-31 season			
Month	Straight cars†	Mixed cars‡	Total cars	Month	Straight cars†	Mixed cars‡	Total cars
September	5.0	11.0	16.0	September	47.0	21.4	68.4
October	31.0	30.7	61.7	October	83.0	25.9	108.9
November	39.0	22.9	61.9	November	23.0	30.0	53.0
December	23.0	44.7	67.7	December	16.0	32.2	48.2
January	12.0	37.5	49.5	January	12.0	40.0	52.0
February	130.0	41.2	171.2	February	56.0	73.1	129.1
March	254.0	24.3	278.3	March	235.0	33.2	268.2
April	211.0	20.6	231.6	April	102.0	8.1	110.1
Total	705.0	232.9	937.9	Total	574.0	263.9	837.9

* A few carloads were shipped during August and May.

† Carloads containing 400 boxes or more were tabulated as straight cars but the contents were converted to a standard car basis by dividing the total by 504.

‡ Carloads containing less than 400 boxes were tabulated as mixed cars but the contents were converted to a standard car basis by dividing the total by 504.

Sources of data:

Compiled from records of shippers, Pacific Fruit Express, Southern Pacific, and Western Pacific railroads.

[12] Statement of Mr. G. Scalmanini, Manager of the San Francisco Artichoke Growers' Association, to the author.

[13] Randolph, C. N. Near-sunflowers for food. Los Angeles Tribune. June 28, 1914.

The Federal-State Market News Service at San Francisco has reported carload shipments of artichokes since the 1922–23 season (table 10). During the 1923–24 season shipments totaled nearly 1,000 carloads. The peak of shipments was not reached, however, until the 1926–27 season when 1,192 carloads were moved. Since then, rail shipments have declined to 837.9 carloads (table 3).

Considerable quantities are shipped in carloads of mixed vegetables. During the 1929–30 and the 1930–31 seasons the equivalent of 232.9 and 263.9 carloads respectively or between 25 and 30 per cent of total shipments were shipped in this manner (table 3). Records were obtainable for these two seasons only because some shippers did not keep records for a period of more than two years. It was stated by shippers, however, that the movement in mixed carloads has always been important.[14]

In addition to the shipments made by rail, considerable quantities are transported to cities in California by truck. Only 12.2 carloads were sent to California cities by rail in 1930–31, whereas the equivalent of 501 carloads destined for California consumption were hauled by truck.

The trucking situation has an important bearing on the attempts that have been made or are likely to be made to market collectively the portion of the crop that is consumed in California. Producers who can transport their commodities to nearby markets build up trade connections which they are unwilling to sever. Furthermore, some consider that they receive liberal remuneration for the service of delivering their products to market which they might not receive if they marketed collectively. Again, others point out that additional bookkeeping and accounting is involved if sales are made through an association.

The experience of many organizations which have attempted to operate under similar conditions is that members soon withdraw or

[14] The records of shipments as reported by the Federal-State Market News Service at San Francisco do not coincide with the records obtained from shippers and carriers. See table 11. In reporting shipments the Federal-State Market News Service reports a shipment as a straight carload of artichokes if the contents are principally artichokes and as a mixed car of vegetables if other vegetables are contained in such volume that none predominates. In checking the records of shippers and carriers errors were found to be due to improper billing of carloads of mixed vegetables as straight carloads of artichokes and vice versa. Inasmuch as the Federal-State Market News Service obtained its data on shipments from the carriers, the former's reports contained the same errors. It will be noted from table 11, however, that there is a tendency for the errors in reporting shipments and the omission of data on the quantities of artichokes in mixed carloads to offset one another. Nevertheless, during some months there was considerable discrepancy between the Federal-State Market News Service reports and shippers' and carriers' records of shipments.

sell their products in violation of their contracts with their association. This happened during the 1930–31 artichoke season when a cooperative association attempted to handle sales to local markets. (See pages 34 and 35.)

DISTRIBUTION OF CALIFORNIA ARTICHOKES

Of the total fresh production of artichokes in the 1930–31 season, California markets used approximately 613 carloads or 45 per cent (table 4).[15] The remainder, 826 carloads or 55 per cent, was shipped to various cities in the United States and Canada.

TABLE 4

Distribution of Artichokes, 1930–31 Season—September to April
(In carloads of 504 boxes)

	San Francisco	Los Angeles	Sacramento, San Joaquin, and Santa Clara valleys	Total California
Unloads	431	189	.....	.....
Reshipments from markets by rail	23	16	.....	.....
Truck shipments to destination	.....	.....	32	.....
Apparent consumption	408	173	32	613
Rail shipments to points outside of California	.....	.....	.....	826
Total fresh shipments	.....	.....	.....	1,439

Sources of data:
Compiled from the records of shippers, Pacific Fruit Express, Southern Pacific, and Western Pacific railroads; monthly unload reports on fruits and vegetables from Federal-State Market News Service at Los Angeles and San Francisco, California; the records of shippers of carloads of mixed vegetables; and the records of the California Artichoke Growers' Cooperative Association.

The distribution of artichokes to the various cities in the United States has been a matter of considerable concern among growers and shippers. Some contend that shipments are made to only a few cities and that other cities do not receive artichokes. Table 12 shows the distribution of artichokes by states (and Canada) and cities for the crop years 1929–30 and 1930–31. These data were assembled from the records of shippers, the Pacific Fruit Express, and the Southern Pacific and Western Pacific railroads. The shipments of artichokes in carloads of mixed vegetables as well as the shipments of straight carloads of artichokes were traced to their final destination by recording the original billings and the diversions filed with the carriers.

[15] California markets use approximately 75 per cent of the avocado crop, 11 per cent of the orange crop, 8 per cent of the lemon crop, and 8 per cent of the walnut crop. Data from the records of the Calavo Growers of California, the California Fruit Growers Exchange, and the California Walnut Growers Association.

It will be noted from table 12 that artichokes are being shipped directly from California to 120 cities in the United States and Canada. The quantity sold in many of the cities is small, totaling only 0.1 carload during a season. These small quantities are shipped in carloads of mixed vegetables.

From the records of shippers of mixed vegetables it is apparent that there is a possibility of not only widening the distribution of artichokes but also of increasing the quantities being sold in numerous cities by actively promoting distribution in this manner. Many carloads of mixed vegetables contain no artichokes and some contain only a few boxes. Some shippers of mixed vegetables do not handle artichokes. At times orders for artichokes are cancelled because of the fact that shippers do not have access to a quality suitable for shipment. They invariably reported that they had had little encouragement or assistance in stimulating sales of artichokes. Most of them feel that they could expand sales if they were supplied with advertising material and recipe folders and if an effort were made to give them access to supplies that would stand shipment.

In addition to the direct shipments of artichokes to various cities in the United States, considerable quantities are reshipped from some of the larger cities to surrounding cities. Park and Edwards,[16] in a study of the sources of supply of fruits and vegetables in twenty-nine small and medium-sized cities, stated that those cities situated within 50 miles of large markets received over 80 per cent of their fruit and vegetable supplies by truck from the large markets. They also stated that fruits and vegetables were redistributed in mixed carloads from large cities to an area lying from 125 to 200 miles distant.

The quantity of artichokes redistributed from large cities to smaller cities has not been determined. However, one is probably safe in assuming that considerable quantities are reshipped from these markets. This is indicated by the fact that the Louisville Grocery Survey of the United States Department of Commerce[17] reported prices of artichokes in Louisville, Kentucky, although, as will be noted from table 12, no direct shipments of artichokes were made to that city.

The cities receiving direct carload shipments of artichokes in any considerable quantity are comparatively few. Table 5 shows those cities which in the 1930–31 season received approximately 5 carloads

[16] Park, J. W., and Brice Edwards. Shipping fruits and vegetables in mixed carloads. U. S. Dept. Agr. Bur. Agr. Econ. *p.* 7. August, 1930. (Mimeo.)

[17] Louisville Grocery Survey. U. S. Dept. Commerce. (In preparation.) Sections furnished the author through the courtesy of Edwin B. George, Chief, Marketing Service Division.

or more of artichokes. It will be noted that only fourteen cities were in this class. Furthermore, only six cities—New York, Chicago, Boston, New Orleans, Philadelphia, and Buffalo—received 25 carloads or more.

Table 5 also shows the number of persons of Italian origin and the total number of persons residing in those cities receiving direct shipments of artichokes in considerable volume. There is a tendency

TABLE 5

Carloads of Artichokes Received in Important Cities, Persons of Italian Origin, and Total Number of Persons Residing in Those Cities

City	Number of carloads of artichokes received in 1930-31 season	Number of persons of Italian origin 1930	Total population, 1930
	1	*2*	*3*
New York	423.6	1,070,355	6,930,446
Chicago	120.9	181,861	3,376,438
Boston	55.8	90,819	781,188
New Orleans	39.0	24,011	458,762
Philadelphia	31.7	182,368	1,950,961
Buffalo	27.8	51,361	573,076
Rochester	19.4	55,413	328,132
Cleveland	18.9	56,317	900,429
Pittsburg	17.9	47,940	669,817
Detroit	17.6	61,968	1,568,662
St. Louis	8.7	23,817	821,960
Baltimore	6.2	23,305	804,874
Kansas City	4.8	9,941	399,746
Cincinnati	4.7	7,432	451,160

Sources of data:

Col. 1: From table 12.

Col. 2: U. S. Dept. Com. Bur. of the Census. Press Releases 24 and 25 on population in 1930. October 15 and 16, 1931.

Col. 3: U. S. Dept. Com. Bur. of the Census. Press Release 17 on population in 1930. September 29, 1931.

for the larger cities to receive the greatest number of carloads. However, there is a closer relation between the number of persons of Italian origin residing in the several cities and the number of carloads of artichokes received in these cities than between the total population and the number of carloads. The relation is by no means proportional yet it appears significant. The reason is that those of Italian origin have included the artichoke in their diet for a long time. (See discussion page 4, on origin of the artichoke.) The importance of this fact from a marketing standpoint is better appreciated when it is realized that those of Italian origin consume the smaller-sized artichokes. Consequently, the cities with large numbers of

persons of Italian origin furnish an important outlet for the smaller sizes. Hence, if efforts are to be made to widen distribution not only the total population of the cities in which such efforts are to be made should be considered but also the number of persons of Italian origin residing therein.

A knowledge of the relation between the number of carloads of artichokes shipped directly to certain cities and the numbers of persons of Italian origin residing in those cities may be useful if attempts are made to widen the distribution of the commodity. Table 6 shows a number of cities in the United States which contain considerable

TABLE 6

CITIES IN THE UNITED STATES WHICH HAVE A CONSIDERABLE NUMBER OF PERSONS OF ITALIAN ORIGIN BUT ARE NOT RECEIVING DIRECT SHIPMENTS OF ARTICHOKES IN VOLUME, 1930

City	Number of persons of Italian origin	City	Number of persons of Italian origin
Bridgeport, Conn.	21,837	Scranton, Pa.	10,775
Denver, Colo.	9,071	Springfield, Mass.	12,095
Hartford, Conn.	20,986	Syracuse, N. Y.	21,702
Jersey City, N. J.	44,914	Trenton, N. J.	19,284
Milwaukee, Wis.	12,444	Washington, D. C.	10,170
New Haven, Conn.	41,858	Wilmington, Del.	8,346
Newark, N. J.	85,398	Worcester, Mass.	9,794
Patterson, N. J.	29,333	Yonkers, N. Y.	17,306
Providence, R. I.	53,635	Youngstown, Ohio	18,588

Source of data:

U. S. Dept. Com. Bur. of the Census. Press Releases 24 and 25 on population in 1930. October 15 and 16, 1931.

numbers of persons of Italian origin but which are not receiving direct shipments of artichokes in volume. As was pointed out above (page 10) many of these cities receive artichokes from nearby larger cities. Some of them fall within the trade area of the larger markets and they will undoubtedly continue to draw their fruit and vegetable supplies from these markets. However, it may be possible to develop a direct business in artichokes in some of the cities listed in table 6. This would eliminate the expense of handling and reshipment from the larger markets. It would also tend to put the product on the smaller markets in a fresher condition by avoiding the delay between arrival on the larger markets and reconsignment and arrival on the smaller markets.

Another fact worthy of attention brought out in table 5 is that certain cities are not receiving as large a volume of artichokes in proportion to the number of persons of Italian origin residing therein

as are other cities. Philadelphia, for instance, receives only 0.17 of a carload of artichokes per thousand persons of Italian origin, while Boston receives 0.61 of a carload, and New Orleans 1.60 carloads. Variations in the purchasing power of the persons in these cities, variations in terminal marketing costs, differences in the extent of the surrounding trade area, the existence or nonexistence of large numbers of persons of southern European origin (other than those of Italian origin) who are familiar with the artichoke, and the extent of trade promotion may account for the differences in the ratios of the number of carloads of artichokes received in various cities to the number of persons of Italian origin. From the standpoint of trade promotion, it would be desirable to know the reasons for the variations.

TRADE CHANNELS

The chart on the cover page pictures diagrammatically the trade channels that were found to exist in the marketing of artichokes. It will be noted that artichokes may move from producer to consumer in various ways. It is seldom, however, that all of the agencies shown in the chart are utilized in bringing the product of a given producer to a given consumer. Many of the agencies are performing somewhat similar services, and in some cases, one agency in a particular market is combining the services that two or more agencies perform in another market. Furthermore, shortcuts are sometimes made in the marketing process which eliminate one or more agencies. For instance, many producers whose farms are located near San Francisco sell all or a portion of their output directly to a jobber instead of selling through a shipper. On the other hand, the product may be handled by many agencies before it reaches the consumer. For example, a producer may sell through a shipper who consigns carloads to a receiver in one of the larger eastern markets; the receiver may sell a part of the carload to a wholesaler, who, in turn, may sell a part of his purchase to a jobber; the jobber may sell part of his supply to a shipper of mixed vegetables who will send them to a wholesaler or jobber in a smaller city. The latter will then supply the various retail outlets from which consumers make their purchases.

Trade Channels for Sales in Cities East of the Mississippi.—The principal channel for sales in cities east of the Mississippi is: producer→ shipper→ receiver→ jobber→ retailer or push-cart peddler→ consumer. The producer grades and packs the artichokes and delivers them to the shipper's loading shed. The shipper makes up carloads from the deliveries of growers, chooses the market to which the car-

loads are to be shipped, and handles the documents incidental to the transactions between himself and the grower, the carrier, and his agent in eastern markets. The receiver sells principally to jobbers or to those who perform a similar function, who, in turn, sell to various retail outlets. From the records of shipments and interviews with various members of the trade, it is estimated that between 70 and 75 per cent of the sales in cities east of the Mississippi move in this manner.

On the New York market, the push-cart peddler plays a most important part in the distribution of artichokes. It has been estimated that nearly 50 per cent of the total receipts of artichokes at that market reach consumers through the push-cart peddlers. Since they deal principally with the consumers of southern European origin, the smaller-sized artichokes are sold almost exclusively in this way.

Trade Channels for Sales in Cities West of the Mississippi (Except California).—The trade channel for sales in cities west of the Mississippi (except California) is principally: producer→ jobber in San Francisco or Los Angeles→ shipper of carloads of mixed vegetables→ jobber or wholesaler[18] in smaller cities→ retail outlets→ consumer. The shippers of carloads of mixed vegetables who operate in Los Angeles and San Francisco are important factors in the distribution of artichokes to the cities west of the Mississippi. They sometimes make purchases direct from shippers at producing points. However, the variety of vegetables that one particular shipping point has to offer at a given time is often limited, hence the business of shipping mixed vegetables to the territory west of the Mississippi is confined largely to mixed-car shippers who purchase most of their requirements of artichokes from jobbers in San Francisco and Los Angeles.[19]

Trade Channels for Sales in California Cities.—The trade channels for artichokes in California are numerous and varied. Some of the producers own an interest in jobbing houses on the San Francisco market and dispose of their supply through this channel. Others sell to truckers, who, in turn, supply jobbers and retailers in cities from 100 to 300 miles distant from the point of production. A few sell a

[18] The wholesaler is a dealer who handles carlots while the jobber is one who handles less than carlots. Some wholesalers also do a jobbing business. This makes it difficult to distinguish between wholesalers and jobbers. Some dealers who are primarily jobbers insist that they are wholesalers and are often spoken of in the trade as wholesalers.

[19] For a discussion of the shipment of carloads of mixed vegetables see: Park, J. W., and Brice Edwards. Shipping fruits and vegetables in mixed carloads. U. S. Dept. Agr. Bur. Agr. Econ. *p. 1–31.* August, 1930. (Mimeo.)

part of their production to shippers of mixed vegetables. Still others deliver their entire crop to shippers who sell to truckers and jobbers. In 1931, however, most of the sales in California cities, other than San Francisco, were made through the California Artichoke Growers' Cooperative Association. In this respect the organization performed the same function as a shipper. Approximately 137 carloads were sold by this organization in the 1930–31 season, 105 carloads of which were sold through its agent in Los Angeles, and 32 carloads of which were sold to truckers who hauled their purchases to cities in the Sacramento, Santa Clara, and San Joaquin valleys.

Appraisal of the Adequacy of Existing Trade Channels.—The numerous trade channels that were found to exist are the result of several factors, including the economies in handling the commodity that may be obtained by taking the shortest route to reach the consumer, the marketing system that has developed in the handling of similar products, and the trade connections established by various individuals handling artichokes.

In most respects the existing trade channels appear adequate, particularly in the case of that portion of the commodity which goes to California markets and to markets west of the Mississippi. Here the marketing problem is principally one of facilitating the movement through the existing channels by active trade promotion. The shipments of artichokes in carloads of mixed vegetables has been an important method of introducing the product in several areas. It appears that this method of distribution can and should be stimulated. Furthermore, it is desirable to utilize as many jobbers at terminal markets as can render efficient service rather than to attempt to restrict the number of jobbers. During the 1930–31 season the California Artichoke Growers' Cooperative Association attempted to restrict the sale of artichokes to a limited number of jobbers in Los Angeles. This restriction tended to retard sales rather than to stimulate them.

In one respect, the trade channels for artichokes were inadequate, particularly for sales in cities east of the Mississippi; for prior to the 1930–31 season no agency existed to coordinate the distribution of shipments to these cities. During part of the 1930–31 season, a control board of the California Artichoke Growers' Cooperative Association (see page 35), undertook the function of balancing shipments and supplies in the principal eastern markets. The results that were obtained appear to justify the permanent establishment of such a body (see pages 23 to 27).

TRADE RELATIONS

With the movement of artichokes through the various trade channels between producer and consumer a body of trade relations has become established among the several agencies which handle the product. In some instances, the relations are simple and direct as is the case when a grower or shipper sells artichokes to jobbers or truckers for cash. On the other hand, the relations are often complex, particularly when the commodity is sold through shippers on consignment who, in turn, ship to receivers on consignment.

A knowledge of existing trade relations is important in understanding the marketing of artichokes and in appraising the possibilities for improvement. It is also desirable that these relations be definite and equitable, especially between producer and shipper, because of the fact that the producer's principal contact with marketing problems is through the shipper.

Grower-Shipper Relations.—The relations between grower and shipper vary considerably in the several artichoke sections. These relations have been influenced by custom and law. They have also been shaped by the type of land tenure prevailing in the industry.

Most artichoke growers, for the past thirty years or more, have conducted their farming operations collectively. They form informal partnerships of from two to twelve growers to lease the land, finance the undertaking, and conduct the enterprise. One of the partners is usually designated the 'captain'; it is his duty to decide what crops and how many acres of each to plant. Another is designated the 'market man'; it is function to make arrangements for the sale of the crops. In several cases, the 'market man' for one of the groups has become the 'market man' or shipper for several groups. Some shippers who handle large quantities of artichokes hold shares in a number of the partnerships whose products they sell and in this manner have control of the marketing of the products of several farms.

There is a rapid turnover in the membership of the various grower groups. A comparison of a list of 208 of these groups as they existed in 1925 and in 1931 showed that approximately 20 per cent were changed to such an extent that they were known to the public by a new name and 30 per cent of those which were in existence in 1925 were entirely dissolved.[20] In contrast to this situation among growers,

[20] Mr. F. L. Lathrop, Los Altos, California furnished the author a list of the partnerships as they existed in 1925. Mr. J. Fassio, Castroville; Mr. Dante Dianda, Half Moon Bay; and Mr. L. Poletti, Davenport, checked this list for changes.

some of the shippers have been in business for a period of from fifteen to twenty years.

As was stated above, there is considerable variation in the trade relations between growers and shippers in the several artichoke sections. In addition there is a variation even within the same section. Those groups of growers in which a shipper holds a financial interest are in some cases either morally or legally bound to market their products through this particular shipper. On the other hand, some groups that are not connected with a shipper are free to choose their marketing agency. However, even some of the latter groups are morally obligated to sell through a particular shipper because the shipper performs several services for the group, such as making production credit and leasing arrangements.

The position of the shippers has an important bearing on any action that may be taken to improve marketing conditions or to widen the distribution of the product. The shippers by reason of their holdings in a number of partnerships are in a sense growers. Consequently, any method of attack on marketing problems on an industry-wide basis must receive their support. Furthermore, it is essential that the majority of them cooperate if a program of coordination of shipments is to be undertaken.

In selling the products of growers, it is the usual practice of shippers to handle them on consignment. The shipper receives for his services a commission of 3 per cent[21] of the gross sale price on delivered sales and 5 per cent on f. o. b. sales. The returns to growers are based on the gross selling price less freight, refrigeration, cartage, commission, and such other charges as may be incurred in the marketing process. These charges vary with the gross sale price, the market in which the commodity was sold, the number of boxes of artichokes in a particular shipment, and the rapidity with which the product was sold when it reached destination. (See tables 7 and 8 for schedule of charges.)

In making returns to growers, shippers render account sales. An inspection of a number of these account sales showed, however, that most lacked the detail which would allow growers to check the charges incident to the marketing of a particular shipment. Many were merely statements of the gross selling price and the net returns to growers. Some showed the charges incurred but often combined several charges under one heading; for example, most shippers included under "freight" the charges for top icing, refrigeration, and freight.

[21] It is the practice of receivers to charge a commission of 10 per cent on delivered sales and remit 3 per cent to shippers.

A considerable improvement in the account sales was made during the 1930–31 season largely through the efforts of the California Artichoke Growers' Cooperative Association. For instance, the destinations of the shipments were shown and some of the expenses incurred

SUGGESTED ACCOUNT SALES

JOHN DOE AND COMPANY

Packers and Shippers
of Artichokes

Davenport, Calif., *February 13, 1931*

Sales Account for

Richard Roe, Grower No. 198

Invoice No. *70* Car No. *PFE 31995* Date Loaded *Jan. 18, 1931* Destination *New York*

Date Sold *Jan. 30, 1931*

Number of boxes	Description				
7	Artichokes @ $5.50	$38	50		
12	Artichokes @ 5.00	60	00		
9	Artichokes @ 4.00	36	00		
28	Total gross amount			$134	50
	Charges				
28	Freight @ $0.7525	$21	07		
28	Refrigeration @ 0.1786	5	00		
28	Top icing @ 0.04	1	12		
28	Service charge on top icing 0.0357	1	00		
28	Cartage @ 0.07	1	96		
28	Demurrage @ None	0	00		
28	Receiver's commission @ 7%	9	42		
28	Shipper's commission @ 3%	4	04		
28	Market director @ 0.015	0	42		
	Total charges			$ 44	03
	Net proceeds			$ 90	47

were definitely set forth. However, even with the improvements made in the 1930–31 season the account sales did not give sufficient detail to enable a grower to check the various items of expense or judge the reasonableness of the charges made for the various services in the marketing process.

The lack of detailed accounts has been responsible for considerable ill feeling and suspicion on the part of growers toward shippers. Some hold that shippers have made improper returns on shipments or made fictitious charges against the grower's account. Without detailed information in account sales which would permit them to ascertain the exact situation, growers have, naturally, considered their relations with shippers inequitable. It appears that much of the suspicion on the part of growers toward shippers could be overcome by the rendition of account sales which would set forth in detail each specific item of expense. During the period of this study it was suggested that the author prepare an account sales which would meet these requirements. The suggested account sales prepared for this purpose is shown on page 18.

Since some of the charges vary a brief discussion follows. In table 7 the freight, top icing, refrigerator service charge on top icing, and refrigeration charges on a carload of artichokes of 504 boxes between Davenport, California, and four important eastern markets are shown. It will be noted that these charges, with the exception of top icing, vary with the destination of the shipment. Attention must also be called to the fact that should the carload contain fewer than 504 boxes the expense per box would be greater than that shown in table 7 while if it contained more than 504 boxes the expense per box would be less.

The charges shown under the item refrigeration in table 7 are for standard refrigeration. In case the shipment moves under initial icing only, a charge of $4.50 a ton for the initial ice is made, which amounts to $23.85 for a refrigerator car with ice tanks of 10,600 pounds capacity and $28.35 for refrigerator cars with ice tanks of 12,600 pounds capacity. In addition a service charge of 20 per cent of the standard refrigeration rate is made for the refrigeration resulting from the icing in the tanks. For example, a carload of artichokes consisting of 504 boxes moving to New York under initial icing only would bear a refrigeration charge of $41.85 or $0.083 a box if the capacity of the ice tanks were 10,600 pounds, while if the capacity of the ice tanks were 12,600 pounds the refrigeration charge would be $46.35 or $0.092 a box.

The charge for cartage varies with the city in which the shipment is sold. This charge is made for the service of trucking the product from the railroad car to the receiver's place of business. The cartage charges for several cities are shown in table 8.

The expense item demurrage may or may not be incurred in marketing a given carload of artichokes. It is usually incurred when

TABLE 7

CHARGES FOR SHIPPING ARTICHOKES FROM DAVENPORT, CALIFORNIA, TO FOUR EASTERN MARKETS, 1930–31

Destination	Freight		Top icing*		Service charge on top icing†		Standard refrigeration‡		Total	
	Carloads of 504 boxes	40-pound box	Carloads of 504 boxes	40-pound box	Carloads of 504 boxes	40-pound box	Carloads of 504 boxes	40-pound box	Carloads of 504 boxes	40-pound box
New York and Philadelphia	$379.26	$0.7525	$20.16	$0.04	$18.00	$0.0357	$90.00	$0.1780	$507.42	$1.0068
Boston	379.26	0.7525	20.16	0.04	19.00	0.0377	95.00	0.1885	513.42	1.0187
Chicago	316.41	0.6278	20.16	0.04	15.00	0.0298	75.00	0.1488	426.57	0.8464

* Top icing is carried in addition to standard refrigeration in warm weather. Charges made for top icing are additional to the charges for standard refrigeration.

† A service charge of 20 per cent of the refrigeration rate is made by the Pacific Fruit Express for the refrigeration resulting from the top icing. This charge is commonly referred to by shippers as "freight on top icing."

‡ Standard refrigeration means that the car will be re-iced from time to time as it moves toward destination. See discussion page 19 for charges in case the shipment moves under initial icing only.

Sources of data: United Artichoke Growers of California, San Francisco, California, and Pacific Fruit Express, San Francisco, California.

a shipper instructs a receiver not to unload the shipment upon arrival at destination but to hold it intact on the railroad tracks. This practice is fairly common when for one reason or another prices in a particular market are expected to advance. The charges of demurrage vary with the number of days the shipment is held on track.

The receiver's and shipper's commissions fluctuate with the sale price. They can be easily calculated from the totals in the upper part of the account sale. Similarly, the market director's fee can be quickly reckoned.

TABLE 8

Cartage Charges on Artichokes in Several Cities, 1930–31

City	40-pound box	20-pound half box
Baltimore	$0.05	$0.03
Boston	0.05	0.04
Buffalo	0.05	0.03
Chicago	0.05	0.03
Cincinnati	0.05	0.03
Cleveland	0.07	0.03
Detroit	0.05	0.05
New Orleans	0.04	0.03
New York	0.07	0.04
Philadelphia	0.05	0.04
Pittsburgh	0.05	0.03
St. Louis	0.05	0.03

Source of data:
United Artichoke Growers of California, San Francisco, California. Courtesy Mr. J. L. Debenedetti.

Shipper-Receiver Relations.—The common practice among shippers was to deal with only one receiver in each of the markets to which they made shipments. Some of the shippers stated that they had dealt with the same receiver in a given market for a period of several years. Shippers stated, however, that they were not obligated to continue to sell to a particular receiver but were free to sever their connections should they desire to do so. They also reported that receivers did not advance funds to them to conduct their business or solicit business from growers. They further stated that contracts were not made between receiver and shipper.

The receiver handles the products sent him by the shipper on a consignment basis. After the goods are sold he renders to the shipper an account sales which shows the prices received and the charges incurred. These are similar to the Suggested Account Sales shown above (page 18). An inspection of several account sales of receivers

showed only one item lacking which would be desirable, namely, the date or dates when the products were sold.

Receiver-Wholesaler and Jobber Relations.—The relations between receivers and wholesalers and jobbers are similar to those found in the marketing of other perishable commodities.[22] Sales are made primarily for cash or on short term credit.

In one or two respects, however, the situation in this phase of the marketing process is somewhat different from that of other perishables. Owing to the fact that there are relatively few shippers of artichokes and that each shipper deals with only one receiver in each market (page 21) trading in artichokes is confined to a relatively few wholesale dealers. Those wholesalers who are not acting as receivers for a California shipper and yet desire to handle artichokes in order to carry a full line of vegetables are obliged to purchase them from their competitors. This situation is felt by some to tend to restrict the sale of artichokes because wholesalers do not push those products which they must buy from competitors. A possible way to remedy this situation would be to adopt the practice of splitting cars among several wholesale receivers, allowing each receiver a turn at handling the larger portion of the carload. This is done in several markets with other fruits and vegetables which are handled in relatively small volume with the effect of stimulating sales in terminal markets.

In New York City another situation prevails which is reported to be peculiar to the marketing of artichokes. The sales made by receivers to push-cart peddlers are consummated through individuals who do not have places of business. These individuals bargain with and buy from the receivers and in turn bargain with and sell to the push-cart peddlers. In a sense they act as jobbers inasmuch as they purchase large lots and sell these in smaller lots to the push-cart trade although they do not actually handle the product. These individuals are said to have a marked influence on the prices of the smaller-sized artichokes in New York City. Some hold that they take a margin more than commensurate with the services they perform and that they dominate the situation to such an extent that their dealings may be classed as racketeering.

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[22] See: Stokdyk, E. A., H. E. Erdman, Charles H. West, and F. W. Allen. Marketing California apples. California Agr. Exp. Sta. Bul. 501:72–85. 1930.

ARTICHOKE PRICES

Records of prices for artichokes in several important markets are available for the 1925–26 to 1930–31 seasons inclusive.[23] These were converted to an f. o. b. basis (Davenport, California) by subtracting the transportation and icing charges from the terminal market prices (tables 13 and figures 2 and 3).

Prices for Artichokes of Best Quality in New York, Chicago, and Boston Converted to an F.O.B. Basis, Davenport, California, 1925–26 to 1930–31

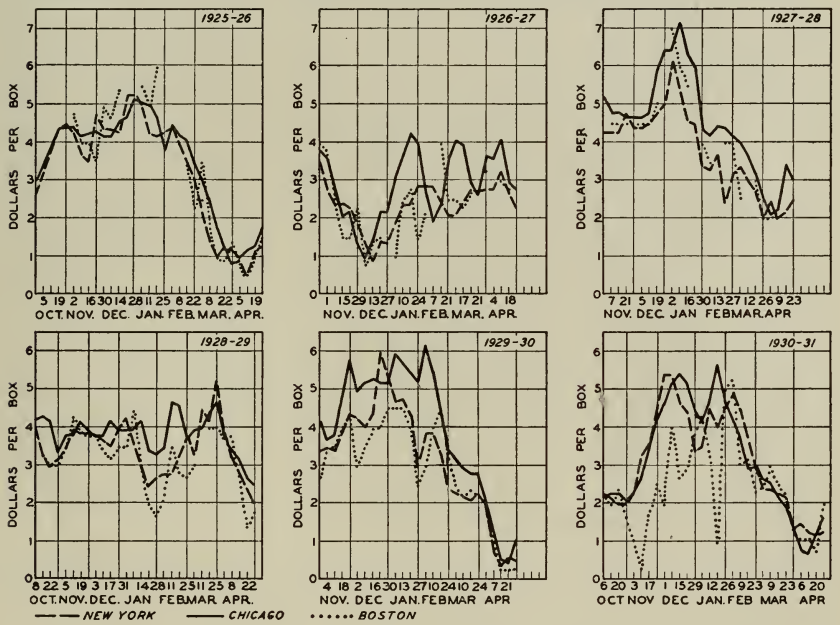


Fig. 2.—The prices received from sales in eastern markets were at times nearly equal, while at other times there was considerable variation. Part of the variation was due to differences in quality and part to excessive or meager supplies on a particular market. Beginning January 27, 1931, shipment regulation was practiced through a control board. This tended to equalize the prices received by growers from sales in various cities. (Data from table 13.)

Prices Received from Sales in Various Markets.—It will be seen from table 13 and figures 2 and 3 that the prices received by growers from sales of best quality artichokes in the principal markets were at times nearly equal, while at other times there was considerable variation, sometimes as much as $2.00 and $3.00 a box.

[23] Federal-State Market News Service. Artichokes. Semiweekly issues. San Francisco, California. (Mimeo.)

Part of the variation was due to differences in the quality of the artichokes. This is indicated by the wide range in prices received for artichokes of best and poorest quality on the same market at a given time (table 13 and figure 4). It is likely that the best quality on one market during a particular week was not of as good quality as the best quality on another market. Moreover, it is also likely that the poorest

Prices for Artichokes of Best Quality in New York, Los Angeles, and San Francisco Converted to an F.O.B. Basis, Davenport, California, 1925–26 to 1930–31

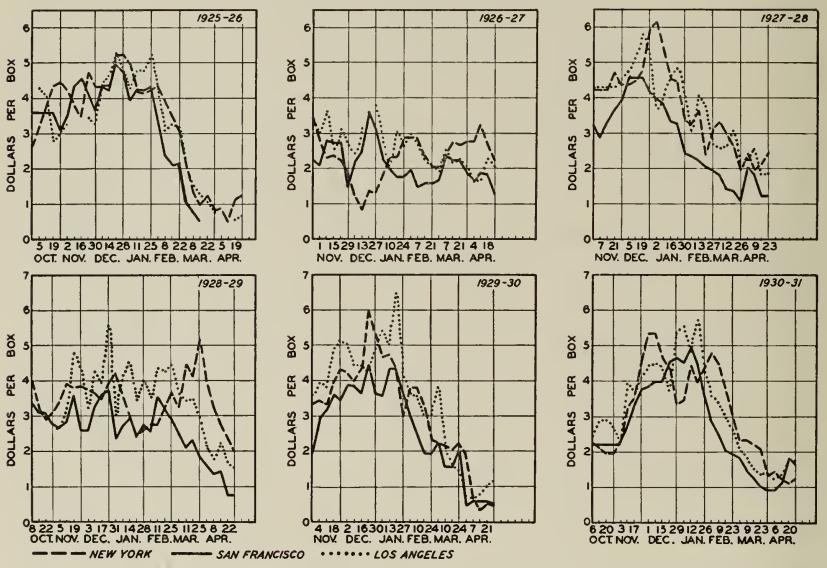


Fig. 3.—Prices received from sales in Pacific Coast markets were at times equal to those received in New York. At other times, there was considerable variation. Some of the variation was due to differences in quality and some to differences in supplies on the markets. (Data from table 13.)

quality on a particular market was not of as poor quality as that sold on another market. It was impossible to determine how much of the price variations were caused by this factor since the sales quoted in the market reports were not reported by grade. However, the differences in quality must be recognized as a factor responsible for part of the variation in prices received from sales in different markets.

Another factor which is partly responsible for the variations in prices is the fluctuation in the supply of artichokes on each of the markets at a particular time. This is indicated by the variation in arrivals of artichokes on several of the markets (columns 2, 4, 6, and

8 of tables 14 and 15).[24] Here it will be noted that at times the arrivals on one market were small, while on another market they were comparatively large. This situation is perhaps better illustrated in columns 3, 5, 7, and 9 of tables 14 and 15 and figure 5, where the arrivals on each of the four principal eastern markets are calculated as a percentage of the total arrivals on these markets.

Prices for Artichokes of Best and Poorest Quality in New York Converted to an F.O.B. Basis, Davenport, California, 1925–26 to 1930–31

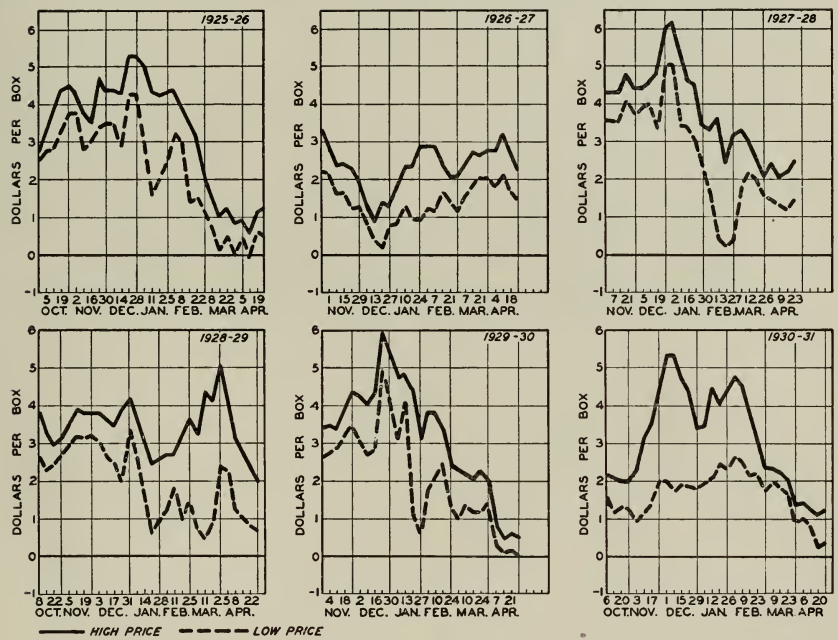
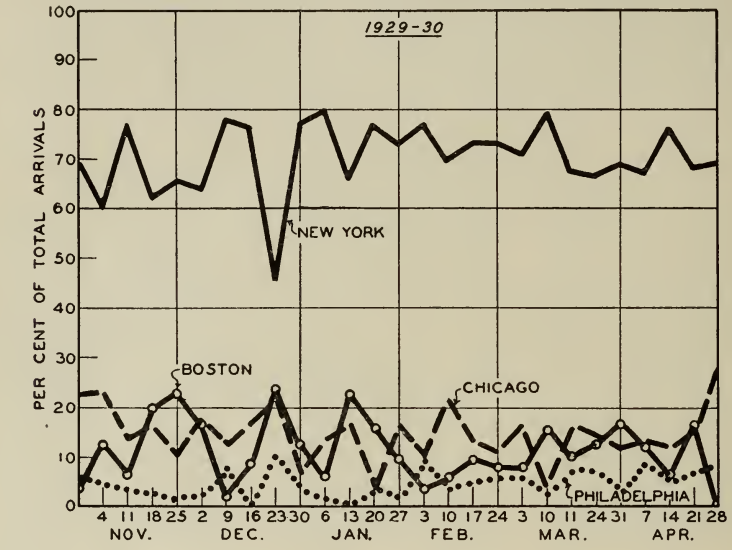


Fig. 4.—The difference between prices for best and poorest quality indicates a wide range in quality. In some years artichokes of poor quality sold at the market for less or not much more than the shipping charges. (Data from table 13.)

The principal reason for the fluctuations in arrivals has been that prior to the organization of a control board in the 1930–31 season (page 35) each shipper was without knowledge of the desination of the shipments of other shippers. Another factor that has influenced the variation in arrivals was that a considerable quantity of artichokes was shipped in carloads of mixed vegetables (page 8) and the price prevailing in a particular market on some of the other vegetables made it advisable to send the mixed carload to that market. A third factor has been that some shippers have not established connections

[24] Complete data on arrivals were available for only two seasons. See page 8.

ARRIVALS OF ARTICHOKES IN NEW YORK, CHICAGO, BOSTON, AND PHILADELPHIA IN PER CENT OF TOTAL FOR THESE CITIES, 1929–30 AND 1930–31


1929-30
PER CENT OF TOTAL ARRIVALS
NEW YORK
BOSTON
CHICAGO
PHILADELPHIA
4 11 18 25 2 9 16 23 30 6 13 20 27 3 10 17 24 3 10 11 24 31 7 14 21 28
NOV. DEC. JAN. FEB. MAR. APR.

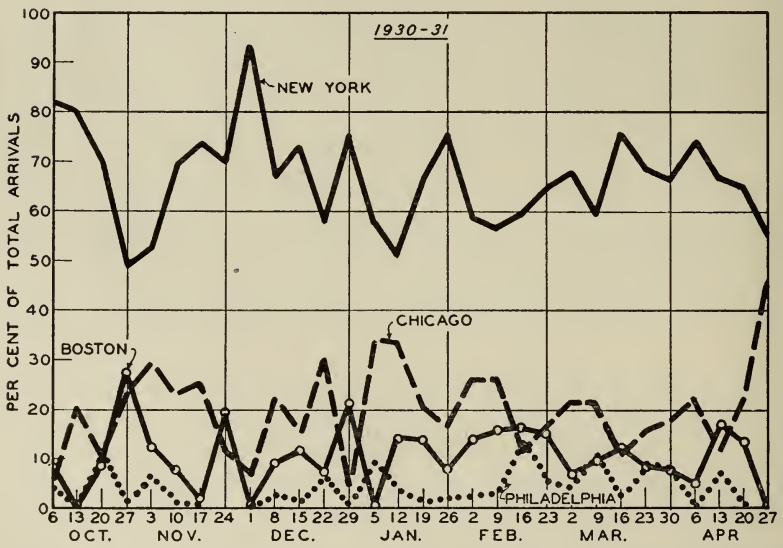

1930-31
PER CENT OF TOTAL ARRIVALS
NEW YORK
CHICAGO
BOSTON
PHILADELPHIA
6 13 20 27 3 10 17 24 1 8 15 22 29 5 12 19 26 2 9 16 23 2 9 16 23 30 6 13 20 27
OCT. NOV. DEC. JAN. FEB. MAR. APR

Fig. 5.—The arrivals on each of the four principal eastern markets were calculated as a percentage of the total arrivals on all of these markets. There was considerable fluctuation in the proportion of the total arrivals on each of the four principal eastern markets, primarily because each shipper was without knowledge of the destination of shipments of other shippers. (Data from tables 14 and 15.)

in all markets and have therefore sent their products to only one or two markets. These factors complicate distribution problems. However, the control board took them into account in working out a shipment-directing program and handled the situation in such a manner that shipments were more nearly balanced with market capacity.

The foregoing discussion of arrivals should not be interpreted to mean that it is always desirable to attempt to send a constant percentage of total shipments to each market. It may at times be desirable to withhold entirely shipments from a particular market if the products sent there previously have not moved into consumption but have been carried over from one week to another. However, the first step in making a more even distribution of supplies on the various markets is to attempt to send a more or less constant percentage of total shipments to each market for this in itself will tend to avoid excessive weekly carryovers on a particular market.

Factors Affecting Prices.—As was noted on pages 23–24, the quality and the supply of artichokes (as indicated by arrivals) on each market exert an influence on prices. However, these factors were not found to be as important as other factors in determining prices on some markets.

The prices for artichokes of best quality, of poorest quality, and the average of these two prices which prevailed in several markets during the 1929–30 and 1930–31 seasons are shown in tables 16 and 17. The prices for artichokes of best quality are the average of the range of prices received for that quality; for example, if sales reported during the week were from $4.50 to $5.00 per box for best quality, the price shown in the tables is $4.75. Similarly, the prices for poor quality are the average of the range of prices reported. The average prices are the simple averages of prices for best quality and poorest quality.

Prices in Chicago, Boston, and Philadelphia were found to be closely related to the prices prevailing in New York City. The relation is shown graphically in figure 6. The straight lines represent the average relation between the prices in Chicago, Boston, and Philadelphia and New York prices. The dots represent the relation for the various weeks of the season. The reason for the close relation between prices in other markets and New York appears to be that the latter is considered the most active market and the one which is most likely to absorb considerable quantities without severe price declines. Those who deal in artichokes watch New York prices closely. Shippers

frequently divert carloads that were originally destined for markets other than New York to the latter market if they anticipate higher prices in New York. On the other hand, they sometimes divert shipments originally billed to New York to other markets. When they are in doubt as to the market to which to send a particular shipment they invariably send it to New York. If it were not for the fact that shippers do divert shipments from one market to another there prob-

Relation of Chicago, Boston, and Philadelphia Artichoke Prices to New York Prices, 1929–30 and 1930–31

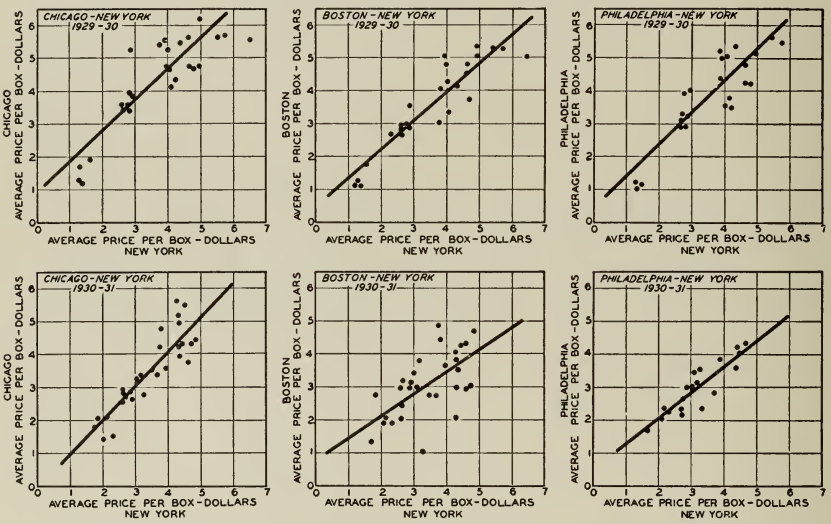


Fig. 6.—In 1929–30 and 1930–31 Chicago, Boston, and Philadelphia artichoke prices each week were found to be closely related to New York artichoke prices. New York prices were found to be influenced primarily by supplies on that market. There was also some relation between the prevailing price of lettuce in New York and the price of artichokes. See figures 7 and 8. (Data from tables 16 and 17.)

ably would be, at times, greater price differences between markets than are found to exist.

It will be noted from figure 6 that there is a tendency for Chicago and Philadelphia prices to be more closely related to the New York prices than are Boston prices. Boston is geographically located farther east than Chicago and New York; hence shipments which reach Boston cannot be diverted from that market without an out-of-line hauling charge.

Prices in Los Angeles and San Francisco were also found to be closely related to New York prices. In a sense, then, the various markets for artichokes may be looked upon as a part of one large

Factors Affecting Artichoke Prices in New York, 1929–30

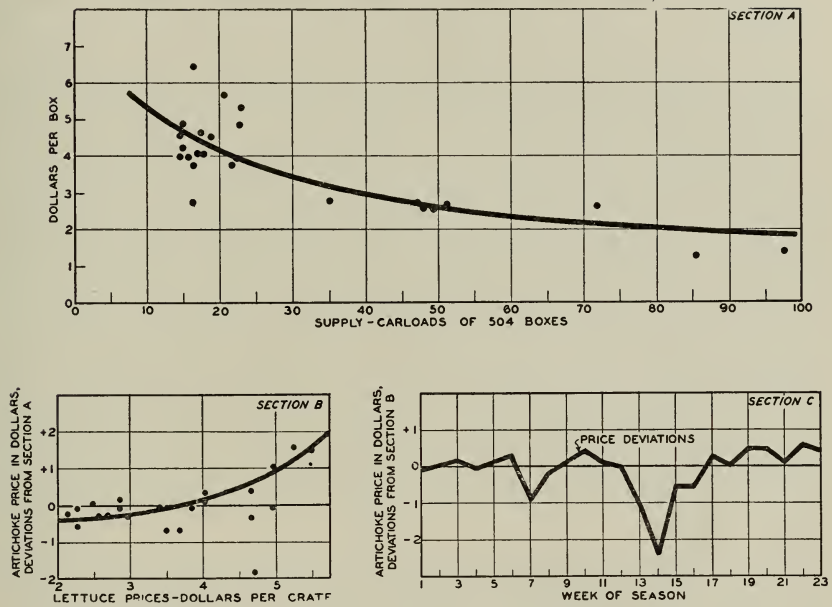

SECTION A
DOLLARS PER BOX
SUPPLY - CARLOADS OF 504 BOXES
SECTION B
ARTICHOKE PRICE IN DOLLARS, DEVIATIONS FROM SECTION A
LETTUCE PRICES-DOLLARS PER CRATE
SECTION C
ARTICHOKE PRICE IN DOLLARS, DEVIATIONS FROM SECTION B
PRICE DEVIATIONS
WEEK OF SEASON

Fig. 7.—New York prices were found to be influenced by the supply on the market (Sec. *A*) and the prevailing prices of lettuce (Sec. *B*). The fluctuations not accounted for by these two factors (Sec. *C*) were probably due in part to variations in quality. (Data from tables 16, 18, and 20.)

Factors Affecting Artichoke Prices in New York, 1930–31

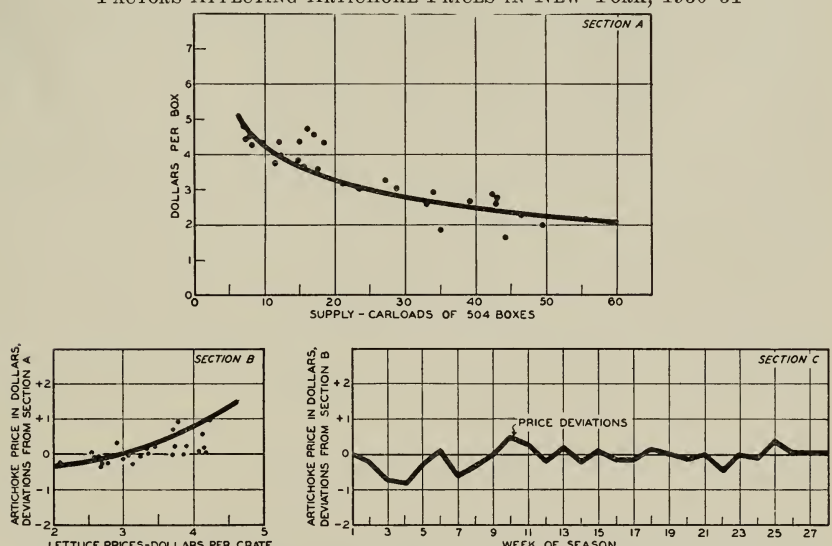

SECTION A
DOLLARS PER BOX
SUPPLY - CARLOADS OF 504 BOXES
SECTION B
ARTICHOKE PRICE IN DOLLARS, DEVIATIONS FROM SECTION A
LETTUCE PRICES-DOLLARS PER CRATE
SECTION C
ARTICHOKE PRICE IN DOLLARS, DEVIATIONS FROM SECTION B
PRICE DEVIATIONS
WEEK OF SEASON

Fig. 8.—The same factors, the supply of artichokes on the market and the prevailing prices of lettuce, were found to affect artichoke prices during the 1930–31 season as were found in the 1929–30 season. Compare with figure 7. (Data from tables 17, 19, and 21.)

market area with price-making forces coming to a focus in New York City.

The foregoing situation indicates that a knowledge of the factors affecting prices in New York will be of aid in anticipating probable prices in several markets.

The weekly arrivals of artichokes were found to be a factor influencing New York prices. However, it was found that the total supply on the market, that is, the weekly arrivals plus the carryover from the previous week, was more closely related to prices in New York than were arrivals alone. Tables 18 and 19 show the supply of artichokes on the New York market, by weeks, as calculated from the data on arrivals and unloads. Section *A* of figures 7 and 8 show the relation between the quantities on the New York market and prices during the 1929–30 and 1930–31 seasons. The curves represent the average relation between prices and supplies and the dots represent the relation between prices and supply during the individual weeks of the season.

The reasons for the fluctuations of individual weekly prices above or below the average prices as represented by the curves in Section *A* of figures 7 and 8 were sought. The unloads of several vegetables which were thought to compete with artichokes were tabulated by weeks for the 1929–30 and 1930–31 artichoke seasons and studied in relation to the prices which were above and below the average. No consistent relation was found, however, between the unloads of these vegetables and the fluctuations above and below the supply-price curves in Section *A* of figures 7 and 8, except in the case of lettuce which showed an inverse relation. The prices of these several vegetables were also tabulated (tables 20 and 21) and examined with respect to the fluctuations. It was found that the prevailing prices for lettuce were rather consistently related to the deviations from the supply-price curves. This relation is shown in Section *B* of figures 7 and 8.[25] A possible explanation of this relation is that, of the various green vegetables unloaded in New York during the artichoke season, the lettuce unloads are the largest. The prices received for this important vegetable would be expected then to influence the prices of other green vegetables. It seems logical that this would be particularly true in the case of artichokes because the latter are eaten as salads by many

[25] It will be noted in comparing figures 7 and 8 that there was a closer relation between the fluctuations in artichoke prices and lettuce prices in 1929–30 than in 1930–31. The probable reason is that the fluctuations above and below the price-supply curve in 1930–31 were not so great as in the 1929–30 season.

consumers,[26] as is lettuce, and hence would be a direct competitor of lettuce.

The deviations from the curves in Section *B* of figures 7 and 8 are shown in Section *C* arranged in the order of the weeks of the season. These deviations are the fluctuations in artichoke prices not accounted for by variations in the supply of artichokes and fluctuations in lettuce prices. Some of the deviations can be accounted for by variations in quality. For example, during the thirteenth, fourteenth, and fifteenth weeks of the 1929–30 season considerable quantities of frozen artichokes were received on the New York market. The market report[27] of January 31, 1930, stated that most of the artichokes were of ordinary quality and a considerable portion were frozen. The New York Daily Fruit Reporter[28] reported frozen stock on the market between January 24, 1930, and February 13, 1930. Beginning January 28, 1930, and continuing to February 13, 1930, a statement was carried in the report as follows: "Wide range in condition, mostly frozen, some worthless."

The preceding discussion of factors affecting prices may be of aid in planning shipment-directing programs such as were undertaken by the control board (page 35) during the latter part of the 1930–31 season. With data available on the artichoke shipments being made to various markets and the prevailing prices of lettuce, the probable price that will be received when a certain quantity is placed on the New York market may be anticipated. With this information at hand the relative advantages of disposing of particular shipments on the New York market or some other market can be more intelligently considered.

Another way in which this information may be useful is in judging whether to carry shipments from one week to the next after they have reached a terminal market or to unload and sell them immediately.

A further possible use of a knowledge of the factors affecting prices is in case shipments become excessively large and prices fall so low that they are considered unremunerative to growers and shipment restriction is considered. Then the question of the probable effect of restriction on returns to growers arises. The answer to this question depends on the relation between supplies and prices on the different markets.

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[26] Other consumers, particularly those of Italian origin, eat artichokes as a hot vegetable.

[27] Federal-State Market News Service. Artichokes. No. 28. San Francisco, California.

[28] New York Daily Fruit Reporter. *p. 4.* January 28, 1930.

In addition, it is desirable that those who produce artichokes understand the price-making forces. All too frequently growers are prone to blame the marketing agencies for low returns when excessive supplies are really responsible.

COOPERATION IN MARKETING

The San Francisco Artichoke Growers' Association.—The first attempt to market artichokes collectively was made in 1907 when a group of growers in the Half Moon Bay district made up carloads of artichokes to ship East. This procedure continued under an informal agreement until 1912. In that year, an organization was formed known as the San Francisco Artichoke Growers' Association.

The preamble of the articles of association stated the problems of the growers:

"We, the undersigned, being engaged in the growing of artichokes and other vegetable products, and realizing that the state markets are insufficient for the sale of all our crops, and being therefore desirous of creating a market for said produce, and having found that without cooperation and joint effort among the growers, the necessary standardization and uniformity of our product cannot be accomplished and the expenses necessary for advertising, for transportation, and for marketing cannot be borne; and having found by experience that by an association of growers we can not only accomplish what is impossible for the individual grower, but we can also effect a great saving in the expense of preparation and the transportation of said produce and thus be able to put it upon the market at a much less cost to the consumer and thereby create a greater consumption for said produce and necessarily a better market . . . ."

The purposes of the organization were specific and simple:

"For the purpose of selling all our produce and of creating a market therefor and to effect a material saving in the cost of transportation of said produce, we hereby form and join this association."

The affairs of the association were conducted by a committee, elected annually. A local manager was employed who billed and routed cars, made collections, kept records, and sent returns to the growers. A specific charge was made to cover estimated expenses. At the end of the year a patronage dividend was declared after expenses had been paid and a reserve set aside.

The association operated a sales office in the city of New York from 1907 to 1918. One of the members of the organization spent the major part of each crop season in the New York office to handle sales.

The peak of membership (28 farms) and volume of sales was reached in the year 1915. From that time on, the membership and volume of sales declined and in 1928 the association ceased to function. This was due to two factors: In the first place, the cities of San Francisco and the East Bay region, including Oakland and Berkeley, grew rapidly. As a result an increasing proportion of the crop in the Half Moon Bay district was sold there. Some of the members of the association opened jobbing houses in San Francisco and sold their entire production there as well as that of others. In the second place, production of artichokes had extended southward from Half Moon Bay to Davenport and Santa Cruz. Growers in these areas began shipping to eastern markets and formed the Half Moon Bay Coastside Artichoke Growers' Association. Some of the members of the San Francisco Association joined the Half Moon Bay Association.

The San Francisco Artichoke Growers' Association performed effectively the marketing functions which were undertaken. When, however, it became apparent that marketing conditions had changed and that it could no longer render the services for which it was organized it ceased operations.

The Half Moon Bay Coastside Artichoke Growers' Association.—[29] This organization was formed in 1917. It was patterned after the San Francisco Artichoke Growers' Association and performed similar functions, except that it sold through eastern receivers instead of through its own sales office. It reached its peak in membership (75 farms) and volume of sales in the 1925–26 season.

The Half Moon Bay Association operated successfully but the members felt that increased bargaining power might be obtained if a larger portion of the crop were under the control of one shipping organization. Consequently, in 1929 an informal merger took place with a group of growers who had employed a private shipper. The latter organization was called the United Artichoke Growers of California.

United Artichoke Growers of California.—As stated above, this name was applied to the informal merger of the Half Moon Bay Association and other growers. In some respects it operated as a cooperative association, but strictly speaking it was not inasmuch as growers did not elect a governing body and patronage dividends were not declared. The manager of the inactive Half Moon Bay Association acted as sales agent or shipper for the growers, receiving a commission of 3 per cent of the gross sales price on consigned shipments and 5 per

[29] Based on statements of Mr. J. L. Debenedetti, Manager.

cent of the gross sales price on f. o. b. sales. A contract between the growers and the agent was made for a period of four years, beginning July 1, 1929. This contract provided, however, that during July or August of any year a majority of the growers could terminate the arrangement by giving proper notice to the agent. In the 1930–31 season, growers representing 50 farms sold the portion of the crop shipped to eastern markets in this manner. In August, 1931, the growers exercised their privilege of canceling the contract, a part of them affiliating with another agent and a part continuing with the same agent.

United States Artichoke Union.—This organization was formed in 1926. It aimed to set f. o. b. prices to growers on the following basis: during the month of October prices to growers were to be $3.50 per 40-pound box; $3.75 from November 1 to 15; $4.50 from November 15 to December 31; $4.25 from January 1 to January 15; $4.00 from January 15 to January 31; $3.00 during the month of February; $2.00 during March; and $1.00 during April.

According to press notices,[30] the association had a membership representing 8,000 acres. A sales agent was employed who attempted to stimulate f. o. b. sales and hold prices at the above figures. The attempt proved futile and the organization ceased operations in the same year (1926–27 crop season) as it started.

The efforts of this association are worthy of consideration. It tried to put into effect a supposition that has been dominant among producers of many commodities, that is, that a monopoly price can be obtained through the control of the marketing of the product. This organization soon found that monopoly prices can not be obtained without control of supplies.

California Artichoke Growers' Cooperative Association.—This association was organized in 1930 to handle the sale of artichokes in California cities (except San Francisco) and to advertise the commodity during the 1930–31 season. It was reported that approximately 95 per cent of the growers became members.

A sales agent was appointed to distribute the tonnage sold on the Los Angeles market. He received all shipments from members, determined the amount to be placed on the market each day, stored part of the receipts if they appeared to be in excess of local requirements at the prevailing price, lowered prices to jobbers if the volume of receipts were such that storage was impracticable, and raised prices to jobbers when conditions warranted.

[30] Pacific Rural Press 112(17):464. 1926.

The association also made sales to truckers who hauled the product to points in the Sacramento, Santa Clara, and San Joaquin valleys. In addition, it handled the sales of small-sized artichokes to canneries. No attempt was made, however, to sell on the San Francisco market inasmuch as several members of the association had their own jobbing houses there.

Sales in eastern markets were made by established shippers, but an arrangement was made whereby the shippers deducted a sum of 10 cents per box to be paid to the association for advertising purposes. Sales in California made by the association were subject to the same assessment. (See footnote 33, page 38.)

Some of the accomplishments of the organization were (1) the establishment of a control board to direct shipments to eastern points; (2) the fostering and financing of an advertising campaign which resulted in a stimulation of the demand for larger-sized artichokes; and (3) an improvement in the account sales rendered by shippers to growers.

The association was organized for a period of one year only. It was not incorporated and hence had the legal status of an informal partnership. This proved to be a serious error on the part of those fostering the organization. When it became apparent that funds were not available to cover the advertising expenditures, individual members were held liable. Friction arose with the result that growers lost sight of the accomplishments of the association and the possibility of their uniting on an industry program was temporarily delayed.

The association found, moreover, that it was impossible to hold growers to contracts when it was more profitable to sell through channels other than the organization. It also learned that it is a difficult task to handle sales in the markets which are adjacent to the producing areas.

The Control Board.—This board, sponsored by the California Artichoke Growers' Cooperative Association in 1930–31, was composed of five growers and four shippers. The growers were appointed by the association, one each from the districts of Carmel, Castroville, Half Moon Bay, Pescadero, and Santa Cruz.

The control board appointed a market director whose function it was to meet with them semiweekly to plan the distribution of shipments to eastern markets and to act for the board in the interim. Each shipper reported daily to the market director the number of carloads of artichokes and mixed vegetables he had loaded for shipment, expected to load, and had en route. If it were apparent that an excessive

quantity of artichokes was being sent to one particular market, while shipments to other markets were light, the control board made the necessary adjustment. In case there was a conflict among shippers as to which shipments should be sent to certain markets, the market director made the decision.

When the control board began operations, the Boston market had excessive supplies and prices were lower than in other markets. Shipments to this market were restricted and for the remainder of the season prices received from sales in this and other markets tended to be more nearly equal. (See fig. 2.)

The results obtained by the control board are worthy of consideration because it acomplished for the industry one of the more or less undefined objectives of some cooperative organizations, namely, a more balanced distribution of supplies among the principal markets with the result of a more equal pressure on all markets. In marketing situations similar to that which prevails in the artichoke industry where there is a rapid turnover among growers and where shippers are the more permanent factors in the industry, an agency composed of both growers and shippers is the most expedient way to attain the objective of balanced distribution.

ATTEMPTS TO STIMULATE DEMAND

California growers have long recognized the fact that the globe artichoke is an unknown commodity to many consumers. That they had a distinct problem in introducing it to the public was early perceived.

The articles of association of the first growers' organization, the San Francisco Artichoke Growers' Association (1912), provided for the expenditure of funds for advertising to the end that a wider market be developed (page 32). It was specifically stated that this was a task to be undertaken by the industry rather than by individual growers.

Until 1923, however, such advertising as was attempted was done by groups of growers belonging to one or another association or company. This took the form of brand advertising and the distribution of recipe folders.

In 1923 a fund was subscribed by approximately 90 per cent of the growers for an industry-advertising campaign. Retailers were assisted in making displays, demonstrations were given on the preparation and utilization of the product, and recipes were distributed. The Schmidt Lithograph Company, under whose direction the campaign was con-

ducted, stated that the increase in sales in cities where advertising was conducted was phenomenal. Letters from dealers who took an active part in the program supported their statement. The following are typical of these:

"Out of 200 calls made by our crews on the better stores in Cleveland, 145 installations of advertising matter were made. The writer was especially pleased to note that grocers operating stores in neighborhoods where it seemed impossible to handle 'chokes' to advantage, and who, for that reason were the least willing to cooperate with us, succeeded in establishing an excellent trade in the same. However, perhaps the most assuring evidence of the success of the campaign on this market is borne out by the fact that 4,040 boxes were sold up to April 15 of this season, as against 752 boxes last season."[31]

"Artichokes are new to the American trade and our progress with the better class of stores was very good, especially with the Mohican Company who put on a full 20-foot window display. These people had never handled artichokes before but since putting a display into their store they have been constant buyers of artichokes. The same has also occurred in many of the other stores that have put in displays, as well as distributed booklets to their trade. The main point, in our opinion, is to get before the consuming public the proper method of utilizing the artichokes . . . .

"Some fifteen years ago we experienced the same difficulty with grapefruit. At that time the public did not know what grapefruit was. Some people saw it and wondered whether they were overgrown lemons. However, since then grapefruit has been nationally advertised and now you will find it in every restaurant in the country."[32]

Unfortunately, no organized effort was made to follow up the advertising program of 1923 and a large part of its effect was lost. It was not until the 1930–31 season approached that steps were again taken to advertise the product on an industry basis. This time it was fostered and financed by the California Artichoke Growers' Association (page 34) which had as one of its primary objectives the stimulation of demand through advertising.

The 1930–31 campaign was confined principally to the city of New York. Posters were displayed in retail stores, recipe folders were distributed to consumers, and dealers were canvassed. In addition, restaurants and cafeterias were induced to place them on their menus.

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[31] Letter from the Brookhart Fruit Company, Cleveland, Ohio, to the Schmidt Lithograph Company. San Francisco, California. April 24, 1923.

[32] Letter from Leon Brothers, Buffalo, New York, to the Schmidt Lithograph Company. San Francisco, California. April 24, 1923.

Mr. C. J. Eastman, of the firm of N. W. Ayer and Son, who arranged to have artichokes served in the cafeteria of that firm, reported some interesting observations:

"Not more than a third of the people had ever seen them before. Many were skeptical concerning their utility as a food. Few knew how to eat them. Some, however, soon cultivated a taste for the artichoke. There is no question but that there is marked possibility for increasing consumption of this product if it is brought to the attention of the American public."

The 1930–31 campaign was not carried to completion owing to the inability of the association to collect the funds which had been pledged to support it.[33] Shippers stated that the effect of the 1930–31 advertising was a stimulation of demand for the larger-sized artichokes. This they felt was a result of the advertising efforts because native-born Americans purchase the larger-sized artichokes and it was to them that the appeal was made.

In connection with the advertising of a specialty food product such as the artichoke, it should be remembered that the most essential phase of an advertising campaign which aims to promote the consumption of a food is to induce the retailer to stock and display the product. At the same time, it is important that the retailer be prepared to inform consumers on ways and means of utilizing the article. The most effective way to educate the consumer in this respect is through demonstrations. However, since the demonstration frequently entails more expense than an advertising budget permits, the distribution of recipe folders is an acceptable alternative.

The above procedure is often referred to as store advertising or dealer service. However, it is not complete in itself. To obtain maximum results, it is important that newspaper[34] and poster advertising be conducted simultaneously. The three types of advertising aim to meet the usual chain of reactions in the psychological processes which are (1) interest and attention, (2) confidence and desire, and (3)

[33] Growers agreed to pay 10 cents per box to the advertising fund, which sums were to be deducted from the returns on sales through shippers and the association. During the period when prices were higher in Los Angeles than in eastern markets, some growers sold through other channels and the advertising fee could not be collected. It was then proposed to assess the advertising fee on an acreage basis. Difficulty was experienced in collecting this assessment. In addition, preseason estimates of production proved to be in error and it became apparent that the sum which was likely to be collected would be smaller than the estimated budget.

[34] Magazine advertising in addition to newspaper advertising is desirable in case the product has a national distribution or if the product is sold directly to the consumer by the manufacturer. On the other hand, if these conditions do not hold, magazine advertising is relatively ineffective.

decision and action. The newspaper advertisements arouse interest and attract attention, the posters stimulate confidence and desire, and the store displays make the final appeal to induce the consumer to decide to purchase.

However, if an advertising budget allows only one type, the store display method should be employed rather than the newspaper or poster type. In fact, results from the latter two types conducted alone are negligible.

Many firms handling foods have arrived at this conclusion as is evidenced by the fact that some 75 agencies have sprung up in the United States which make it a business to conduct dealer-service advertising campaigns. An indication may be had of the proportion of consumers that may be reached through this form of advertising from a recent survey of consumers' buying habits in connection with a study of apple marketing.[35] Approximately 73 per cent of all classes of consumers went to the stores to make their purchases of apples. Nearly 64 per cent of those in the high income class, 77 per cent in the medium income class, and 78 per cent in the low income class made their purchases in this manner. It is obvious, therefore, that the store display offers an excellent opportunity to reach many persons, and to reach them at the important moment when they are actually making purchases.

That there is a possibility of stimulating the demand for artichokes through properly conducted advertising campaigns is clearly indicated by the results that were secured in the 1923 and 1930 attempts and by the data which were obtained in this study on primary distribution. (See pages 10 to 13.)

The city of San Francisco with a population of less than one-tenth of that of New York City consumes nearly the same quantity of artichokes, primarily because those residing in the former city have become acquainted with the vegetable. Many persons coming to the Pacific Coast report that they had not known the product previously and that they included it in their diet as soon as they had sampled it. Some, however, failed to develop a liking for the artichoke. The fact that San Francisco is near the principal producing section has been an important factor in stimulating consumption there. The vegetable is sold at retail at a lower price than in other cities because transportation charges are less.

There is, however, a possibility of stimulating demand in California cities, even in San Francisco. Numerous agencies report that

[35] Stokdyk, E. A., H. E. Erdman, Charles H. West, and F. W. Allen. Marketing California apples. California Agr. Exp. Sta. Bul. 501: 61. 1930.

when they have exhibited the product and demonstrated its preparation and utilization at public gatherings, they encountered many persons who were not familiar with it.

Efforts to stimulate the demand for artichokes are likely to be most effective if directed primarily toward native-born Americans. Those of foreign origin, particularly southern Europeans, know the product whereas a large proportion of the former do not. Nevertheless, in conducting advertising campaigns it is important to consider the numbers of persons of foreign origin in a particular area because these furnish an important outlet for the smaller-sized artichokes.

PACKING AND GRADING

It is the prevailing practice among artichoke growers to grade and pack their product on their own farms in contrast with the practice of grading and packing in central packing sheds which is prevalent in the handling of other vegetables.

There is considerable conflict of opinion as to the desirability of decentralized packing. Many growers contend that the artichoke is highly perishable, easily bruised, and will not stand the haul to a central packing plant. In addition, it is claimed that the packing operations furnish employment for farm labor at a time when other farming operations have been completed. If the practice of packing at central plants were adopted, they believe that the labor expense of packing at the central plant would be deducted from the sales price and that their own farm labor would not be utilized.

On the other hand, from the standpoint of uniformity of pack, some growers believe that the packing of the product in a central plant would be desirable. In this opinion they are supported by some of those who make inspections of the product when it is loaded for shipmen. Mr. H. A. Hunt[36] states: "After six years of experience inspecting artichokes in the Castroville district, I have come to the conclusion that one of the most important steps that could be taken to improve marketing conditions, would be the packing of all artichokes from a given district in a central packing plant.

"At the present time there are a large number of growers practically all of whom put up a 'ranch pack' of artichokes. This condition leads to a wide range of quality and nonuniformity of pack and probably accounts in some measure for a considerable range of price at destination.

[36] Letter from Mr. H. A. Hunt, County Agricultural Commissioner, Salinas, California, to the author, May 8, 1931.

"The central packing plant could be expected to do two important things. First, it would make for a uniformly tight pack of artichokes without a variation in sizes in a particular container. Second, it would remove the responsibility for the quality of artichokes packed from, let us say, one hundred growers and place it upon one experienced and impartial man."

Whether or not the adoption of the practice of centralized packing is advisable was not determined in this study. However, in view of the fact that with many other vegetables it has been found advantageous it warrants consideration and experimentation.

Grades.—At the request of a group of growers, the California State Department of Agriculture and the United States Department of Agriculture Bureau of Agricultural Economics made a survey of the factors which constituted quality in artichokes and the latter body promulgated United States standards for globe artichokes in 1926.

These standards have never been officially applied at shipping points, that is, certification as to quality and grade by authorized inspectors has not been undertaken. It is the opinion of the majority of shippers that such certification is impracticable where the grading and packing of the product is done on the farms of growers rather than in central packing plants.

The existing situation with reference to packing and grading limits the volume of f. o. b. sales. Dealers in distant markets are reluctant to make f. o. b. purchases of commodities which are not uniformly graded and standardized.

CANNING OF ARTICHOKES

The canning of artichokes in California was begun in an experimental way during the 1917–18 season. In the 1920–21 season the pack amounted to 700 cases.[37] Since then the amount canned has increased materially, the pack during the 1930–31 season amounting to approximately 55,000 cases (table 9).

The extremely small-sized artichokes are used in canning. A relatively small quantity is canned whole; the bulk of the canned product consists of only the hearts or "chokes." The latter are consumed principally in salads, although among consumers of Italian origin the canned hearts are utilized in the same manner as the fresh artichoke.

The canned product is not well known among consumers, having only recently (1926–27) been put on the market in quantity. It has

[37] Letter from Mr. E. E. Huddleson, Manager Santa Cruz Fruit Packing Company, to the author, April 30, 1931.

been the experience of canners that considerable advertising and promotional work is necessary to sell the commodity in new territory. However, once consumers in a given area have used the product, sales are easily made. One canner reported that through intensive trade promotion the Los Angeles market has been built up to a point where it consumes more than 9,000 cases of canned artichokes annually.

At the present time (1930–31) the canning of artichokes furnishes an important outlet for the extremely small-sized artichokes. Previously, many growers cut these from the plants and discarded them in order to allow the larger-sized flower heads to develop more rapidly.

TABLE 9

Canned Pack of Globe Artichokes in California, 1924–25 to 1930–31

Season	Cases of artichokes packed	Per cent of total crop
	1	*2*
1924–25	15,000	1.9
1925–26	16,500	1.8
1926–27	30,000	3.9
1927–28	27,415	4.3
1928–29	34,798	5.3
1929–30	41,626	6.4
1930–31	55,522	10.1

Sources of data:

Col. 1: 1924-25 to 1926-27 seasons computed from data furnished the author by N. W. Ayer & Son, San Francisco, California. 1927-28 to 1929-30 seasons, data from the Canners' League of California, San Francisco, California. 1930-31 season, compiled by the author from replies to questionnaires sent to artichoke canners. (Some data on canned artichokes are given in terms of tons of the raw product. In converting tonnage figures to a case basis, 30 cases are the equivalent of 1 ton.)

Col. 2: Calculated from data in col. 1 and table 2.

It is believed by a number of people who have had close contact with the marketing of artichokes that the canned product can be used successfully to introduce the artichoke in areas that are not acquainted with the commodity. This conclusion warrants serious consideration from the standpoint of market expansion and trade promotion.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The commercial production of globe artichokes in the United States is confined to a few counties in California along the Pacific Coast. The industry was well established by 1900, the area devoted to the crop amounting to approximately 750 acres. The peak in acreage, 11,700 acres, was reached during the 1925–26 season but declined to 7,550 acres by 1930–31.

The production of artichokes has tended to vary directly with the acreage. The peak of production was attained in 1925–26 with 1,470,000 boxes but declined to approximateiy 900,000 boxes by 1930–31, the most marked decline occurring in the 1926–27 season.

The main shipping season for artichokes is from September 1 to May 1, with February, March, and April the months of largest shipments. Between 25 and 30 per cent of the total shipments are made in cars containing other vegetables. These are reported in the Federal-State Market News Service reports as "mixed vegetables." Rail shipments amounted to the equivalent of 937.9 standard carloads in the 1929–30 season and 837.9 standard carloads in the 1930–31 season. Truck shipments have also been important, approximately 501 carloads destined for California consumption having been transported in this manner. The trucking situation tends to limit collective action in marketing because producers who can transport their commodities to nearby markets build up trade connections which they are unwilling to sever and some consider that they receive liberal remuneration for the service of delivering their products to market.

Of the total fresh production of artichokes in the 1930–31 season, California markets used 613 carloads or 45 per cent. The remainder, 826 carloads or 55 per cent, was shipped to various cities in the United States and Canada. A total of 120 cities received shipments direct from California. The quantity sold in many of the cities was small, totaling only 0.1 carload during the season. Fourteen eastern cities received 5 carloads or more but only six cities—New York, Chicago, Boston, New Orleans, Philadelphia, and Buffalo—received 25 carloads or more. Most of the cities which received direct shipments of artichokes in small quantity obtained them in shipments of carloads of mixed vegetables. In addition to the direct shipments of artichokes to the various cities in the United States, considerable quantities are reshipped from some of the larger cities to nearby cities.

The shipment of artichokes in carloads of mixed vegetables has been an important method of introducing the product in many cities. This method of distribution can be expanded with the result of not only widening the distribution of the commodity but also of increasing the quantities being sold in numerous cities.

There is a tendency toward a direct relation between the number of persons of Italian origin residing in the cities receiving artichokes in considerable volume directly from California and the number of carloads of artichokes received in those cities. Several cities with a large population of Italian origin are, however, not receiving direct

shipments of artichokes. It may be possible through trade promotion to develop direct business in artichokes in some of these cities.

The principal trade channel for artichokes for sales in cities east of the Mississippi is: producer → shipper → receiver → jobber → retailer or push-cart peddler → consumer. In New York City, the push-cart peddler plays a most important part in the distribution of artichokes. For sales in cities west of the Mississippi (except California) the principal trade channels are: producer → jobber in San Francisco or Los Angeles → shipper of mixed vegetables → jobber or wholesaler in smaller cities → retailer → consumer. The trade channels in California cities are numerous because producers in varying circumstances attempt to take the shortest route economically feasible in reaching the consumer.

In most respects the existing trade channels are adequate, the marketing problem being principally one of expediting the movement through the existing channels by active trade promotion. Particular effort should be directed to seeing that shippers of carloads of mixed vegetables have ready access to a supply of artichokes suitable for shipment. It is also desirable that as many jobbers be encouraged to handle artichokes as can render efficient service. This might be accomplished by adopting the practice of splitting cars among the terminal marketing agencies that are performing the jobbing function.

In one respect, the trade channels have been inadequate: prior to the 1930–31 season no agency existed to coordinate the distribution of shipments to the larger eastern markets. At the beginning of the 1930–31 season a control board was established which was composed of both growers and shippers. Through its efforts a more balanced distribution of supplies among the principal markets was attained with the result that a more equal pressure was exerted on all markets. This accomplishment had been one of the aims of the several cooperative associations which handled artichokes but they were unable to attain it alone because none had control of a large enough proportion of the crop. It was not until the leading shippers cooperated that a balanced distribution of shipments was secured. These accomplishments justify the permanent establishment of such a body.

The trade relations between producer and shipper have been influenced by custom, law, and the type of land tenure prevailing in the industry. Most artichoke growers, for the past thirty years or more, have conducted their farming operations collectively. They form informal partnerships of from two to twelve growers to lease the land, finance the undertaking, and conduct the enterprise. Some shippers

who handle large quantities of artichokes hold shares in a number of the partnerships and thus have control of the marketing of the products of several farms.

There is a rapid turnover in the membership of the various grower groups. In contrast to this situation among growers, some of the shippers have been in business for a period of from 15 to 20 years.

Shippers handle the products of growers on consignment, receiving a commission for their services. The shippers' close association with growers in production operations has tended to make them lax in their business relations with growers. An improvement in producer-shipper relations could be made by the rendition of more detailed account sales which would permit the grower to check each item of expense and judge the reasonableness of the charges made for the various services in the marketing process.

There has been a tendency for the major fluctuations in artichoke prices in the several important markets to coincide. However, at times prices in one market have been considerably higher or lower than in other markets. Consequently, the prices received by growers from sales in the principal markets were at times nearly equal, while at other times there was considerable variation. Part of the variation was due to differences in quality and part to differences in the supply of artichokes on each of the markets at a particular time.

Prices in Chicago, Boston, Philadelphia, Los Angeles, and San Francisco were found to be closely related to the prices prevailing in New York City. In a sense, then, the various markets may be looked upon as a part of one large market area with price-making forces coming to a focus in New York City. The principal factors affecting New York prices were found to be the supply of artichokes (arrivals plus carryover) on that market and the prevailing prices of lettuce.

Several cooperative marketing organizations have played an important part in the history of the artichoke industry. For one reason or another all have ceased operations. The California Artichoke Growers' Cooperative Association, organized in 1930, included 95 per cent of the growers and the leading shippers. Its objectives were (1) the balancing of supplies on eastern markets through a control board; (2) the stimulation of demand by advertising; and (3) the handling of that portion of the product which was sold in California cities except San Francisco. The association's objectives were fairly well attained but unfortunately errors which were made in organization and operation caused such a degree of friction among members that the accomplishments were lost sight of and collective action will be delayed.

The packing and grading of artichokes are conducted by growers on their farms in contrast with the practice of grading and packing in central packing sheds which is prevalent in the handling of other vegetables. This results in a nonuniform pack and tends to limit f. o. b. sales. There is considerable diversity of opinion as to the desirability of packing artichokes in central packing plants. Since growers of many other vegetables have found central packing advantageous, it warrants consideration and experimentation.

POSSIBLE SET-UP OF AN ARTICHOKE GROWERS' EXCHANGE

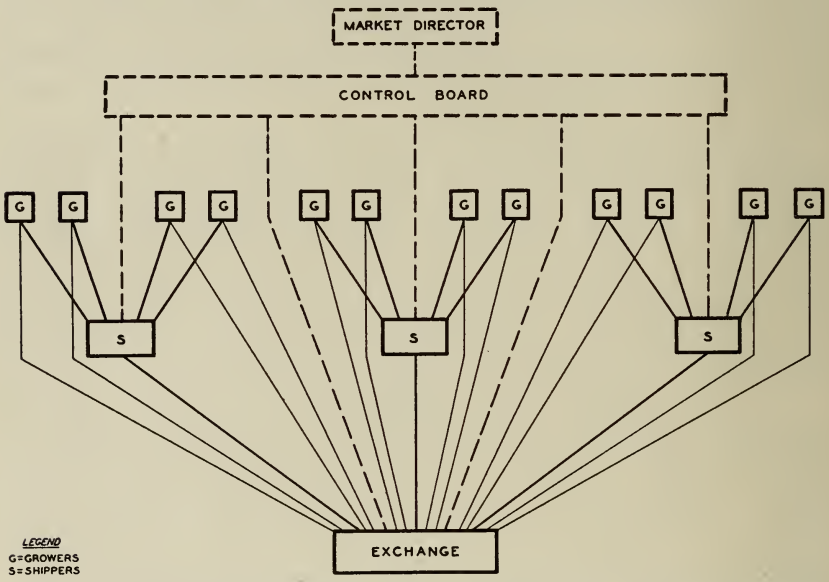

Fig. 9.—Growers and shippers would be members of the proposed artichoke growers' exchange. The control board would also be composed of growers and shippers.

Two advertising campaigns were conducted which were financed by the majority of producers, one during the 1923–24 season and the other in the 1930–31 season. The first campaign stimulated sales in several cities; the second, which was confined principally to New York City, resulted in an increased demand for the larger-sized artichokes. The experience gained in advertising artichokes and similar commodities emphasizes the desirability of expending the larger part of the advertising budget in inducing retailers to stock and display the product. That there is a possibility of stimulating the demand for artichokes through properly conducted advertising campaigns is clearly indicated by the results that were secured in the 1923 and 1930

attempts and by the data which were obtained in this study on the primary distribution of the product.

The canning of artichokes has become an important phase of the artichoke industry. The pack in the 1930–31 season amounted to approximately 55,000 cases. It has been the experience of canners that the canned product, once introduced in a market, sells readily. It is probable that the canned product can be used successfully to introduce the artichoke in areas that are not acquainted with it.

A consideration of the marketing problems which were found, the conditions under which the commodity is produced and marketed, and the trade relations which have been established, points to the desirability of the formation of a permanent organization composed of both growers and shippers, which for convenience will be called an Exchange. The primary functions of the Exchange would be (1) the direction of shipments to eastern markets with the objective of balancing supplies on the various markets; (2) the expediting of the movement of the product through the various trade channels by active trade promotion; (3) stimulation of demand and development of new markets for both the fresh and canned product through advertising; (4) standardization of packing and grading; (5) regulation of trade practices and relations; and (6) collection and dissemination of current market information.

The organization of the Exchange might be along the lines suggested in figure 9. Growers and shippers would be members. Growers selling through a particular shipper would elect one or two grower members to the control board; each shipper would also be a member of the control board. This body would employ a market director whose function would be to execute their policies.

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exceptions, gave access to their records. Mr. E. R. Biddle, Mr. H. S. Stiles, and Mr. W. A. Hall of the Market News Service of the United States Department of Agriculture Bureau of Agricultural Economics in New York, Chicago, and Boston, respectively, provided important information relative to these markets.

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APPENDIX

TABLE 10

Rail Shipments of Artichokes in Carloads* During the Principal Part of the Shipping Season† as Reported by the Federal-State Market News Service by Months, 1923–24 to 1930–31

Month	1922–23	1923–24	1924–25	1925–26	1926–27	1927–28	1928–29	1929–30	1930–31
September	0	14	16	18	29	9	31	18	65
October	5	62	40	52	116	48	89	57	91
November	18	102	80	70	241	85	116	101	36
December	22	53	79	103	182	76	180	93	45
January	34	42	77	102	157	117	110	23	39
February	53	102	200	257	168	158	97	137	130
March	261	237	428	442	154	258	146	262	260
April	207	360	198	130	145	97	168	213	101
Total	600	972	1,118	1,174	1,192	848	937	904	767

* In reporting shipments of artichokes, the Federal-State Market News Service at San Francisco reports a shipment as a straight carload of artichokes if the contents are principally artichokes and as a mixed car of vegetables if other vegetables are contained in such volume that none predominates.

† In some years a few carloads are shipped during August and May.

Sources of data:

1922–23 to 1928–29: California Cooperative Crop Reporting Service.

1929–30 and 1930–31: Compiled from the Federal-State Market News Service. Artichokes. Semiweekly issues. San Francisco. (Mimeo.)

TABLE 11

Comparison of Artichoke Shipments as Reported by the Federal-State Market News Service and as Compiled from Shippers' and Carriers' Records, 1929–30 and 1930–31

Month	1929–30		1930–31	
	Federal-State records	Shippers' and carriers' records	Federal-State records	Shippers' and carriers' records
	1	*2*	*3*	*4*
	*carloads**	*carloads†*	*carloads**	*carloads†*
September	18.0	16.0	65.0	68.4
October	57.0	61.7	91.0	108.9
November	101.0	61.9	36.0	53.0
December	93.0	67.7	45.0	48.2
January	23.0	49.5	39.0	52.0
February	137.0	171.2	130.0	129.1
March	262.0	278.3	260.0	268.2
April	213.0	231.6	101.0	110.1
Total	906.0	937.9	767.0	837.9

* May be either straight or mixed carloads. See footnote page 8.

† Carloads of 504 boxes.

Sources of data:

Cols. 1 and 3: Compiled from the Federal-State Market News Service. Artichokes. Semiweekly issues. San Francisco. (Mimeo.)

Cols. 2 and 4: Compiled from the records of shippers, the Pacific Fruit Express, and the Southern Pacific and Western Pacific railroads.

TABLE 12

DISTRIBUTION OF RAIL SHIPMENTS OF CALIFORNIA ARTICHOKES, 1929–30 AND 1930–31

(In carloads of 504 boxes)

State and city	1929–30 season			1930–31 season		
	Straight cars	Mixed cars	Total cars	Straight cars	Mixed cars	Total cars
Arizona: total	0	0.4	0.4	0	0.4	0.4
Clifton	0	0.1	0.1	0	0.0	0.0
Flagstaff	0	0.0	0.0	0	0.1	0.1
Phoenix	0	0.1	0.1	0	0.1	0.1
Prescott	0	0.1	0.1	0	0.1	0.1
Tuscon	0	0.1	0.1	0	0.1	0.1
Arkansas: total	0	0.4	0.4	0	0.2	0.2
El Reno	0	0.1	0.1	0	0.0	0.0
Ft. Smith	0	0.1	0.1	0	0.0	0.0
Hot Springs	0	0.1	0.1	0	0.1	0.1
Little Rock	0	0.1	0.1	0	0.1	0.1
California: total	6	3.1	9.1	11	1.2	12.2
Chico	0	0.1	0.1	0	0.0	0.0
Eureka	0	0.1	0.1	0	0.1	0.1
Los Angeles	6	2.5	8.5	11	0.9	11.9
Mt. Shasta	0	0.1	0.1	0	0.1	0.1
Santa Rosa	0	0.1	0.1	0	0.0	0.0
Watsonville	0	0.1	0.1	0	0.0	0.0
Weed	0	0.1	0.1	0	0.1	0.1
Colorado: total	0	1.5	1.5	0	0.4	0.4
Denver	0	1.3	1.3	0	0.1	0.1
Grand Junction	0	0.0	0.0	0	0.1	0.1
Pueblo	0	0.1	0.1	0	0.1	0.1
Trinidad	0	0.1	0.1	0	0.1	0.1
Florida: total	0	1.4	1.4	0	1.0	1.0
Augusta	0	0.1	0.1	0	0.0	0.0
Jacksonville	0	0.1	0.1	0	0.0	0.0
Miami	0	0.3	0.3	0	0.2	0.2
Orlando	0	0.1	0.1	0	0.1	0.1
Pensacola	0	0.1	0.1	0	0.1	0.1
Tampa	0	0.6	0.6	0	0.5	0.5
West Palm Beach	0	0.1	0.1	0	0.1	0.1
Georgia: total	0	0.3	0.3	0	0.2	0.2
Atlanta	0	0.1	0.1	0	0.0	0.0
Augusta	0	0.1	0.1	0	0.1	0.1
Savannah	0	0.1	0.1	0	0.1	0.1
Idaho: total	0	0.5	0.5	0	0.5	0.5
Boise	0	0.1	0.1	0	0.1	0.1
Idaho Falls	0	0.1	0.1	0	0.1	0.1
Lewiston	0	0.0	0.0	0	0.1	0.1
Pocatello	0	0.1	0.1	0	0.1	0.1
Twin Falls	0	0.1	0.1	0	0.1	0.1
Wallace	0	0.1	0.1	0	0.0	0.0

Sources of data:

Records of shippers, Pacific Fruit Express, Southern Pacific, and Western Pacific railroads.

TABLE 12 (*Continued*)

State and city	1929–30 season			1930–31 season		
	Straight cars	Mixed cars	Total cars	Straight cars	Mixed cars	Total cars
Illinois: total	57	50.9	107.9	70	50.9	120.9
Chicago	57	50.9	107.9	70	50.9	120.9
Indiana: total	0	0.1	0.1	0	0.3	0.3
Indianapolis	0	0.1	0.1	0	0.2	0.2
La Fayette	0	0.0	0.0	0	0.1	0.1
Iowa: total	0	0.2	0.2	0	0.2	0.2
Cedar Rapids	0	0.0	0.0	0	0.1	0.1
Des Moines	0	0.1	0.1	0	0.0	0.0
Sioux City	0	0.1	0.1	0	0.0	0.0
Waterloo	0	0.0	0.0	0	0.1	0.1
Kansas: total	0	0.2	0.2	0	0.2	0.2
Garden City	0	0.1	0.1	0	0.0	0.0
Hutchinson	0	0.0	0.0	0	0.1	0.1
Wichita	0	0.1	0.1	0	0.1	0.1
Kentucky: total	0	1.0	1.0	0	0.0	0.0
Lexington	0	1.0	1.0	0	0.0	0.0
Louisiana: total	26	10.5	36.5	31	8.5	39.5
Alexandria	0	0.0	0.0	0	0 1	0.1
Baton Rouge	0	0.0	0.0	0	0 1	0.1
La Fayette	0	0.1	0.1	0	0.0	0.0
Monroe	0	0.3	0.3	0	0.0	0.0
New Orleans	26	10 0	36.0	31	8.0	39 0
Shreveport	0	0.1	0.1	0	0.3	0.3
Maryland: total	4	1.5	5.5	3	3.2	6.2
Baltimore	4	1.5	5.5	3	3.2	6.2
Massachusetts: total	64	11.7	75.7	41	14.8	55.8
Boston	64	11.7	75.7	41	14.8	55.8
Michigan: total	12	6.0	18.0	10	7.8	17.8
Detroit	12	5.9	17.9	10	7.6	17.6
Flint	0	0.1	0.1	0	0.1	0.1
Sault Ste. Marie	0	0.0	0.0	0	0.1	0.1
Minnesota: total	0	0.2	0.2	2	1.6	3.6
Austin	0	0.0	0.0	0	0.1	0.1
Duluth	0	0.0	0.0	0	0.1	0.1
East Grand Forke	0	0.0	0.0	0	0.1	0.1
Hibbing	0	0.1	0.1	0	0.1	0.1
Mankato	0	0.0	0.0	0	0.1	0.1
Minneapolis	0	0.1	0.1	0	0.1	0.1
St. Paul	0	0.0	0.0	2	0.9	2.9
Willmar	0	0.0	0.0	0	0.1	0.1
Mississippi: total	0	0.2	0.2	0	0.0	0.0
Columbus	0	0.1	0.1	0	0.0	0.0
Jackson	0	0.1	0.1	0	0.0	0.0

Sources of data:

Records of shippers, Pacific Fruit Express ,Southern Pacific, and Western Pacific railroads.

TABLE 12 (*Continued*)

State and city	1929-30 season			1930-31 season		
	Straight cars	Mixed cars	Total cars	Straight cars	Mixed cars	Total cars
Missouri: total	7	5.2	12.2	7	6.5	13.5
Kansas City	3	0.6	3.6	2	2.8	4.8
St. Louis	4	4.6	8.6	5	3.7	8.7
Montana: total	0	0.7	0.7	0	0.8	0.8
Baker	0	0.0	0.0	0	0.1	0.1
Billings	0	0.1	0.1	0	0.1	0.1
Bozeman	0	0.1	0.1	0	0.1	0.1
Butte	0	0.1	0.1	0	0.1	0.1
Great Falls	0	0.1	0.1	0	0.1	0.1
Havre	0	0.1	0.1	0	0.1	0.1
Helena	0	0.1	0.1	0	0.0	0.0
Miles City	0	0.1	0.1	0	0.1	0.1
Missoula	0	0.0	0.0	0	0.1	0.1
Nebraska: total	1	0.5	1.5	2	0.2	2.2
Grand Island	0	0.1	0.1	0	0.0	0.0
Hastings	0	0.1	0.1	0	0.0	0.0
North Platte	0	0.1	0.1	0	0.1	0.1
Omaha	1	0.2	1.2	2	0.1	2.1
Nevada: total	0	0.1	0.1	0	0.1	0.1
Reno	0	0.1	0.1	0	0.1	0.1
New Jersey: total	13	0.0	13.0	1	0.0	1.0
Jersey City	13	0.0	13.0	1	0.0	1.0
New Mexico: total	0	0.1	0.1	0	0.0	0.0
Gallup	0	0.1	0.1	0	0.0	0.0
North Carolina: total	0	0.1	0.1	0	0.1	0.1
Asheville	0	0.1	0.1	0	0.1	0.1
North Dakota: total	0	0.3	0.3	0	0.4	0.4
Bismarck	0	0.1	0.1	0	0.1	0.1
Fargo	0	0.0	0.0	0	0.1	0.1
Grand Forks	0	0.1	0.1	0	0.1	0.1
Minot	0	0.1	0.1	0	0.1	0.1
New York: total	460	99.4	559.4	347	127.8	474.8
Buffalo	23	9.7	32.7	19	8.8	27.8
New York	419	83.6	502.6	310	113.6	423.6
Port Jervis	0	0.0	0.0	4	0.0	4.0
Rochester	16	6.1	22.1	14	5.4	19.4
Syracuse	1	0.0	1.0	0	0.0	0.0
Utica	1	0.0	1.0	0	0.0	0.0
Ohio: total	13	9.9	22.9	13	10.6	23.6
Cincinnati	2	1.0	3.0	3	1.7	4.7
Cleveland	11	8.9	19.9	10	8.9	18.9

Sources of data:

Records of shippers, Pacific Fruit Express, Southern Pacific, and Western Pacific railroads.

TABLE 12 (*Continued*)

State and city	1929-30 season			1930-31 season		
	Straight cars	Mixed cars	Total cars	Straight cars	Mixed cars	Total cars
Oklahoma: total	0	0.5	0.5	0	0.5	0.5
Ardmore	0	0.0	0.0	0	0.1	0.1
Chickasha	0	0.1	0.1	0	0.0	0.0
Enid	0	0.1	0.1	0	0.1	0.1
Lawton	0	0.1	0.1	0	0.0	0.0
Oklahoma City	0	0.1	0.1	0	0.1	0.1
Tulsa	0	0.1	0.1	0	0.1	0.1
Woodward	0	0.0	0.0	0	0.1	0.1
Oregon: total	0	1.3	1.3	0	2.9	2.9
Klamath Falls	0	0.1	0.1	0	0.1	0.1
La Grande	0	0.1	0.1	0	0.1	0.1
Marshfield	0	0.1	0.1	0	0.0	0.0
Medford	0	0.2	0.2	0	0.2	0.2
Pendleton	0	0.1	0.1	0	0.1	0.1
Portland	0	0.6	0.6	0	2.3	2.3
Salem	0	0.1	0.1	0	0.1	0.1
Pennsylvania: total	40	18.7	58.7	33	17.0	50.0
Philadelphia	29	10.5	39.5	24	7.7	31.7
Pittsburgh	11	8.2	19.2	9	8.9	17.9
Wilkes-Barre	0	0.0	0.0	0	0.4	0.4
South Carolina: total	0	0.2	0.2	0	0.1	0.1
Charleston	0	0.1	0.1	0	0.0	0.0
Greenville	0	0.1	0.1	0	0.1	0.1
South Dakota: total	0	0.1	0.1	1	0.2	1.2
Aberdeen	0	0.1	0.1	1	0.1	1.1
Rapid City	0	0.0	0.0	0	0.1	0.1
Tennessee: total	0	0.3	0.3	0	0.0	0.0
Columbia	0	0.1	0.1	0	0.0	0.0
Memphis	0	0.2	0.2	0	0.0	0.0
Texas: total	1	1.7	2.7	1	0.9	1.9
Amarillo	0	0.1	0.1	0	0.1	0.1
Beaumont	0	0.1	0.1	0	0.1	0.1
Corpus Christi	0	0.1	0.1	0	0.1	0.1
Dallas	0	0.1	0.1	0	0.1	0.1
El Paso	1	1.0	2.0	0	0.2	0.2
Galveston	0	0.1	0.1	0	0.0	0.0
Houston	0	0.1	0.1	1	0.2	1.2
San Antonio	0	0.0	0.0	0	0.1	0.1
Wichita Falls	0	0.1	0.1	0	0.0	0.0
Utah: total	0	0.9	0.9	0	0.4	0.4
Provo	0	0.7	0.7	0	0.0	0.0
Ogden	0	0.0	0.0	0	0.1	0.1
Salt Lake	0	0.2	0.2	0	0.3	0.3
Virginia: total	0	0.1	0.1	1	0.0	1.0
Roanoke	0	0.1	0.1	1	0.0	1.0

Sources of data:

Records of shippers, Pacific Fruit Express, Southern Pacific, and Western Pacific railroads.

TABLE 12 (*Concluded*)

State and city	1929–30 season			1930–31 season		
	Straight cars	Mixed cars	Total cars	Straight cars	Mixed cars	Total cars
Washington: total	1	1.4	2.4	0	1.6	1.6
Bellingham	0	0.1	0.1	0	0.0	0.0
Pullman	0	0.0	0.0	0	0.1	0.1
Seattle	1	1.0	2.0	0	0.9	0.9
Spokane	0	0.2	0.2	0	0.3	0.3
Tacoma	0	0.0	0.0	0	0.2	0.2
Walla Walla	0	0.1	0.1	0	0.1	0.1
West Virginia: total	0	0.0	0.0	0	0.1	0.1
Charleston	0	0.0	0.0	0	0.1	0.1
Wisconsin: total	0	0.1	0.1	0	0.1	0.1
Milwaukee	0	0.1	0.1	0	0.1	0.1
Wyoming: total	0	0.1	0.1	0	0.3	0.3
Casper	0	0.1	0.1	0	0.1	0.1
Laramie	0	0.0	0.0	0	0.1	0.1
Sheridan	0	0.0	0.0	0	0.1	0.1
Canada: total	0	1.1	1.1	0	1.9	1.9
Calgary	0	0.1	0.1	0	0.1	0.1
Edmonton	0	0.0	0.0	0	0.1	0.1
Fernie	0	0.1	0.1	0	0.0	0.0
Lethbridge	0	0.0	0.0	0	0.1	0.1
Medicine Hat	0	0.1	0.1	0	0.0	0.0
Montreal	0	0.1	0.1	0	0.0	0.0
Nelson	0	0.1	0.1	0	0.1	0.1
North Bay	0	0.1	0.1	0	0.1	0.1
Ottawa	0	0.1	0.1	0	0.0	0.0
Regina	0	0.1	0.1	0	0.1	0.1
Saskatoon	0	0.1	0.1	0	0.1	0.1
Toronto	0	0.1	0.1	0	1.0	1.0
Winnipeg	0	0.1	0.1	0	0.1	0.1
Totals	705	232.9	937.9	574	263.9	837.9

Sources of data:
Records of shippers, Pacific Fruit Express, Southern Pacific, and Western Pacific railroads.

TABLE 13

Prices for Artichokes in New York, Chicago, Boston, Los Angeles, and San Francisco Converted to an F.O.B. Basis, Davenport, California, 1925–26 to 1930–31

(In dollars per 40-pound box)

Week beginning	New York		Chicago	Boston	Los Angeles	San Francisco
	Best quality	Poorest quality				
1925–26 season						
September 28	2.62	2.24	2.98	2.48	.....	3.60
October 5	3.24	2.74	3.40	.....	4.29	3.60
October 12	3.74	2.74	3.90	.....	4.04	3.60
October 19	4.37	3.37	4.32	.....	2.79	3.60
October 26	4.49	3.74	4.40	.....	3.04	3.10
November 2	4.24	3.74	4.40	4.73	3.29	3.45
November 9	3.66	2.74	4.15	3.98	.....	4.35
November 16	3.49	2.97	4.23	3.98	.....	4.60
November 23	4.74	3.37	4.28	3.48	3.44	4.10
November 30	4.32	3.49	4.15	4.98	3.29	3.66
December 7	4.32	3 49	4.15	4.61	4.46	4.35
December 14	4.24	2.74	4.53	5.31	4.62	4.35
December 21	5.24	4.24	4.65	.....	5.29	4.98
December 28	5.24	4.24	5.15	.....	4.79	4.73
January 4	4.99	2.99	5.07	5.48	4.29	3.93
January 11	4.24	1.49	4.98	4.98	4.79	4.29
January 18	4.16	1.87	4.65	5.98	4.79	4.22
January 25	4.24	2.49	3.78	.....	5.23	4.35
February 1	4.37	3.24	4.48	2.98	4.29	3.35
February 8	3.87	2.99	4.15	.....	3.04	2.35
February 15	3.49	1.37	4.09	3.48	3.29	2.10
February 22	3.07	1.49	3.40	2.23	3.17	2.15
March 1	2.07	1.24	2.98	3.48	2.04	1.02
March 8	1.37	0.74	2.40	1.73	1.54	0.76
March 15	0.99	0.07	1.65	0.90	1.29	0.50
March 22	1.24	0.49	1.15	0.86	1.04	.....
March 29	0.80	−0.01	1.15	1.36	0.79	.....
April 5	0.87	0.49	0.96	0.73	.....	.....
April 12	0.49	−0.13	1.15	0.48	.....	.....
April 19	1.12	0.62	1.23	0.98	0.54	.....
April 26	1.24	0.49	1.78	1.48	0.67	.....
1926–27 season						
October 25	3.49	2.24	3.78	3.98	3.37	2.23
November 1	2.74	2.12	3.53	3.73	3.04	2.10
November 8	2.30	1.62	2.59	2.48	3.62	2.80
November 15	2.37	1.66	2.07	1.48	2.54	2.73
November 22	2.24	1.24	2.15	1.48	3.12	2.73
November 29	1.87	1.30	1.32	2.23	2.62	1.48
December 6	1.24	0.87	0.98	0.73	2.42	2.23

Sources of data:

Compiled from the Federal-State Market News Service. Artichokes. Semiweekly issues. San Francisco. (Mimeo.) Prices were converted to an f.o.b. basis by subtracting the charges shown in table 7 from the quoted prices in the case of the New York, Chicago, and Boston markets; by subtracting the express charge of 71 cents for the 1925–26 to 1929–30 seasons and the trucking charge of 40 cents for the 1930–31 season in the case of the Los Angeles market; and by subtracting the trucking charge of 40 cents for the 1925–26 to 1929–30 seasons and the trucking charge of 30 cents for the 1930–31 season in the case of the San Francisco market. The method of calculation can be checked for the 1929–30 and 1930–31 seasons by noting the prices in tables 16 and 17.

TABLE 13 (*Continued*)

Week beginning	New York		Chicago	Boston	Los Angeles	San Francisco
	Best quality	Poorest quality				
1926-27 season—(*Continued*)						
December 13	0.82	0.37	1.46	1.36	3.12	2.48
December 20	1.37	0.12	2.15	1.48	.....	3.60
December 27	1.32	0.80	2.15	.....	3.79	3.10
January 3	1.82	0.80	3.15	0.98	2.88	2.23
January 10	2.32	1.37	3.65	2.48	1.98	1.98
January 17	2.32	0.91	4.28	2.73	3.04	1.79
January 24	2.87	0.93	3.98	1.48	2.67	1.75
January 31	2.87	1.24	2.65	2.11	2.96	1.95
February 7	2.87	1.12	1.84	.....	2.67	1.48
February 14	2.37	1.68	2.32	3.98	2.21	1.60
February 21	2.05	1.37	3.57	2.48	2.04	1.54
February 28	2.05	1.12	4.03	2.48	1.92	1.66
March 7	2.43	1.57	3.90	2.23	2.54	2.35
March 14	2.74	1.80	2.90	2.61	2.12	2.23
March 21	2.68	2.07	2.59	.....	2.29	2.23
March 28	2.74	2.07	3.65	3.23	2.04	1.85
April 4	2.74	1.74	3.53	.....	1.62	1.69
April 11	3.24	2.12	4.09	2.98	1.67	1.85
April 18	2.66	1.66	2.90	2.73	2.29	1.85
April 25	2.24	1.41	2.78	.....	2.04	1.25
1927-28 season						
October 31	4.24	3.55	5.15	.....	4.29	3.24
November 7	4.24	3.49	4.78	4.48	4.29	2.85
November 14	4.24	3.49	4.78	4.48	4.29	3.35
November 21	4.74	4.12	4.65	4.48	4.29	3.66
November 28	4.37	3.62	4.65	4.48	4.54	3.98
December 5	4.37	3.87	4.65	4.48	4.79	4.54
December 12	4.49	3.99	4.78	4.48	5.17	4.60
December 19	4.74	3.16	5.90	4.98	5.79	4.60
December 26	5.99	4.99	6.40	.....	5.23	4.16
January 2	6.16	4.99	6.40	6.98	3.54	3.91
January 9	5.37	3.32	7.15	5.98	4.04	3.85
January 16	4.55	3.32	6.32	5.48	4.62	3.35
January 23	4.49	2.99	5.90	.....	4.85	3.29
January 30	3.37	2.32	4.32	3.98	4.04	2.41
February 6	3.24	1.49	4.15	3.48	3.04	2.35
February 13	3.66	0.49	4.40	.....	4.04	2.25
February 20	2.37	0.16	4.38	3.98	3.79	2.04
February 27	3.16	0.41	4.15	3.98	2.67	1.98
March 5	3.32	1.82	3.98	2.48	2.60	1.85
March 12	2.99	2.16	3.65	.....	2.62	1.48
March 19	2.66	1.91	3.15	2.98	3.10	1.39
March 26	1.99	1.49	2.48	1.98	2.21	1.10
April 2	2.41	1.41	2.07	1.98	2.23	2.05
April 9	1.99	1.24	2.23	2.23	2.54	1.85
April 16	2.12	1.16	3.40	.....	1.85	1.23
April 23	2.49	1.41	3.15	.....	1.87	1.23

TABLE 13 (*Continued*)

Week beginning	New York		Chicago	Boston	Los Angeles	San Francisco
	Best quality	Poorest quality				
1928–29 season						
October 8	3.99	2.74	4.15	.....	.....	3.35
October 15	3.24	2.24	4.28	3.23	.....	3.10
October 22	2.91	2.37	4.15	2.98	.....	3.10
October 29	3.12	2.74	3.28	2.98	.....	2.77
November 5	3.49	2.99	3.78	3.48	2.71	2.68
November 12	3.91	3.24	3.78	4.23	3.29	2.85
November 19	3.80	3.18	4.15	3.86	4.84	3.60
November 26	3.82	3.24	3.90	3.73	4.29	2.60
December 3	3.80	3.07	3.78	3.73	3.21	2.60
December 10	3.66	2.66	3.78	3.36	4.29	3.23
December 17	3.49	2.57	4.15	3.15	3.92	3.60
December 24	3.99	1.99	3.90	3.48	5.54	3.73
December 31	4.24	3.49	3.90	3.48	3.04	2.35
January 7	3.62	2.57	3.90	4.48	4.04	2.73
January 14	2.99	1.49	4.15	2.98	4.54	2.98
January 21	2.43	0.57	3.34	1.98	3.48	2.48
January 28	2.66	0.99	3.23	1.65	4.04	2.73
February 4	2.74	1.24	3.40	2.11	3.54	2.54
February 11	2.74	1.87	4.65	3.48	4.37	3.52
February 18	3.24	0.99	4.59	2.73	4.29	3.16
February 25	3.74	1.66	3.65	2.65	4.46	2.91
March 4	3.24	0.74	3.90	2.98	3.60	2.48
March 11	4.49	0.49	3.98	.....	3.46	2.10
March 18	4.12	0.99	4.40	3.98	3.46	2.35
March 25	5.12	2.49	4.65	3.98	2.92	1.85
April 1	3.99	2.37	3.65	3.65	2.17	1.60
April 8	3.24	1.24	3.40	3.73	1.79	1.35
April 15	2.74	1.12	3.15	2.61	2.29	1.41
April 22	2.37	0.87	2.65	1.36	1.67	0.73
April 29	1.99	0.74	2.48	1.73	1.54	0.73
1929–30 season						
October 28	3.37	2.62	4.15	2.65	3.60	1.94
November 4	3.49	2.74	3.65	3.48	3.97	2.91
November 11	3.37	2.82	3.78	3.48	3.86	3.16
November 18	3.99	3.24	4.90	3.98	4.88	3.60
November 25	4.32	3.49	5.78	4.31	5.17	3.48
December 2	4.24	3.16	4.96	2.98	5.04	3.85
December 9	3.99	2.62	5.15	3.48	4.44	3.85
December 16	4.32	2.87	5.23	3.98	4.43	3.67
December 23	5.99	4.99	5.15	3.98	4.25	3.48
December 30	5.32	4 05	5.15	4.48	4.86	3.67
January 6	4.68	3.11	5.90	4.48	5.42	3.54
January 13	4.74	4.05	5.65	4.48	5.01	4.35
January 20	4.32	1.24	5.40	3.98	6.49	4.35
January 27	2.99	0.55	5.15	2.48	4.17	3.54

TABLE 13 (*Concluded*)

Week beginning	New York		Chicago	Boston	Los Angeles	San Francisco
	Best quality	Poorest quality				
1929-30 season—(*Continued*)						
February 3	3.82	1.82	6.15	2.98	3.68	2.98
February 10	3.82	2.16	5.40	3.98	3.54	2.54
February 17	3.30	2.49	4.40	4.48	3.04	1.98
February 24	2.37	1.32	3.40	3.31	3.08	1.98
March 3	2.24	0.93	3.15	2.42	3.82	2.29
March 10	2.17	1.41	2.90	2.23	2.13	1.60
March 17	2.05	1.12	2.78	2.31	1.62	1.54
March 24	2.24	1.18	2.78	2.29	1.47	2.04
March 31	1.91	1.43	2.15	1.98	0.72	0.48
April 7	0.74	0.32	1.15	0.98	0.67	0.60
April 14	0.37	0.07	0.53	0.23	0.79	0.60
April 21	0.57	0.12	0.40	0.23	1.04	0.60
April 28	0.49	0.01	1.07	0.23	1.17	0.56
1930-31 season						
October 6	2.24	1.62	2.15	2.23	2.45	2.20
October 13	2.12	1.16	2.23	1.98	2.85	2.20
October 20	1.99	1.37	2.23	2.31	2.90	2.20
October 27	1.99	1.30	2.03	1.61	2.70	2.20
November 3	2.24	0.99	2.28	0.98	2.30	2.20
November 10	3.24	1.24	2.65	0.23	3.98	2.76
November 17	3.57	1.49	3.40	1.73	3.70	3.40
November 24	4.62	2.05	4.23	2.48	4.10	3.76
December 1	5.37	2.05	4.65	1.98	4.45	3.85
December 8	5.37	1.74	5.15	3.98	4.50	4.00
December 15	4.66	1.98	5.40	2.65	4.40	4.00
December 22	4.37	1.86	5.15	2.98	3.77	4.53
December 29	3.37	1.80	4.40	3.73	5.41	4.64
January 5	3.49	1.99	4.15	4.31	5.55	4.50
January 12	4.49	2.12	4.65	3.23	4.85	4.95
January 19	3.99	2.49	5.65	0.98	5.75	4.50
January 26	4.49	2.37	4.65	4.98	4.40	3.55
February 2	4.82	2.82	4.15	5.23	3.60	2.85
February 9	4.49	2.66	3.73	2.98	3.40	2.51
February 16	3.74	2.16	2.90	3.15	3.00	2.05
February 23	2.99	2.24	2.98	2.23	2.66	1.95
March 2	2.37	1.74	2.65	2.48	2.05	1.85
March 9	2.37	1.99	2.53	2.98	1.85	1.45
March 16	2.24	1.82	2.15	2.48	1.55	1.28
March 23	2.12	1.62	1.90	2.23	1.35	1.08
March 30	1.32	0.87	1.40	1.23	1.45	0.92
April 6	1.49	0.98	0.78	1.06	1.25	0.95
April 13	1.24	0.74	0.65	1.06	1.35	1.14
April 20	1.12	0.24	1.15	0.73	1.75	1.85
April 27	1.24	0.37	1.65	1.98	1.75	1.65

TABLE 14

Total Weekly Carlot Arrivals of Artichokes in New York, Chicago, Boston, and Philadelphia, and the Per Cent that the Arrivals in Each of These Cities Were of the Total Arrivals, 1929–30

Week beginning	Week of season	Total arrivals in New York, Chicago, Boston, and Philadelphia	New York		Chicago		Boston		Philadelphia	
			Carloads of 504 boxes	Per cent of total	Carloads of 504 boxes	Per cent of total	Carloads of 504 boxes	Per cent of total	Carloads of 504 boxes	Per cent of total
		1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
October 28	1	10.9	7.5	68.8	2.4	22.0	0.4	3.7	0.6	5.5
November 4	2	13.2	7.9	59.9	3.0	22.7	1.7	12.9	0.6	4.5
November 11	3	13.6	10.4	76.5	1.8	13.2	0.9	6.6	0.5	3.7
November 18	4	11.8	7.3	61.9	1.9	16.1	2.3	19.5	0.3	2.5
November 25	5	11.8	7.7	65.2	1.2	10.2	2.7	22.9	0.2	1.7
December 2	6	10.8	6.9	63.9	1.9	17.6	1.7	15.7	0.3	2.8
December 9	7	9.3	7.2	77.4	1.2	12.9	0.2	2.2	0.7	7.5
December 16	8	12.0	9.1	75.8	1.9	15.8	1.0	8.4	0.0	0.0
December 23	9	11.6	5.2	44.8	2.5	21.6	2.7	23.3	1.2	10.3
December 30	10	12.4	9.5	76.6	0.9	7.3	1.6	12.9	0.4	3.2
January 6	11	12.2	9.7	79.5	1.6	13.1	0.7	5.7	0.2	1.7
January 13	12	9.7	5.9	60.8	1.6	16.5	2.2	22.7	0.0	0.0
January 20	13	10.3	7.9	76.7	0.4	3.9	1.6	15.5	0.4	3.9
January 27	14	5.5	4.0	72.7	0.9	16.4	0.5	9.1	0.1	1.8
February 3	15	8.1	6.2	76.6	0.9	11.1	0.3	3.7	0.7	8.6
February 10	16	14.6	10.1	69.2	3.2	21.9	0.8	5.5	0.5	3.4
February 17	17	20.2	14.6	72.3	2.7	13.4	1.9	9.4	1.0	4.9
February 24	18	35.5	25.9	72.9	3.9	11.0	2.9	8.2	2.8	7.9
March 3	19	50.8	35.6	70.1	8.2	16.1	4.0	7.9	3.0	5.9
March 10	20	32.7	25.8	78.9	1.1	3.4	5.0	15.3	0.8	2.4
March 17	21	41.0	27.4	66.8	6.6	16.1	3.0	7.3	4.0	9.8
March 24	22	39.6	26.2	66.2	5.6	14.1	5.0	12.6	2.8	7.1
March 31	23	58.2	39.9	68.6	6.9	11.8	9.5	16.3	1.9	3.3
April 7	24	123.4	82.0	66.4	16.4	13.3	15.0	12.2	10.0	8.1
April 14	25	86.9	66.3	76.3	10.6	12.2	6.0	6.9	4.0	4.6
April 21	26	31.4	19.7	62.7	4.7	15.0	5.0	15.9	2.0	6.4
April 28	27	12.1	7.7	63.6	3.4	28.1	0.0	0.0	1.0	8.3

Source of data: Compiled and computed from shippers' and carriers' records.

TABLE 15

TOTAL WEEKLY CARLOT ARRIVALS OF ARTICHOKES IN NEW YORK, CHICAGO, BOSTON, AND PHILADELPHIA, AND THE PER CENT THAT THE ARRIVALS IN EACH OF THESE CITIES WERE OF THE TOTAL ARRIVALS, 1930–31

Week beginning	Week of season	Total arrivals in New York, Chicago, Boston, and Philadelphia	New York		Chicago		Boston		Philadelphia	
			Carloads of 504 boxes	Per cent of total	Carloads of 504 boxes	Per cent of total	Carloads of 504 boxes	Per cent of total	Carloads of 504 boxes	Per cent of total
		1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
October 6	1	23.5	19.2	81 7	1.3	5.5	2.0	8.5	1.0	4.3
October 13	2	20.9	16.7	79.9	4.2	20.1	0.0	0.0	0.0	0.0
October 20	3	23.1	16.0	69.3	2.4	10.4	2.0	8.6	2.7	11.7
October 27	4	14.0	6.8	48.6	3.3	23.6	3.9	27.8	0.0	0.0
November 3	5	14.0	7.2	51.4	4.1	29.3	1.7	12.1	1.0	7.2
November 10	6	12.6	8.6	68.3	2.9	23.0	1.0	7.9	0.1	0.8
November 17	7	5.5	4.0	72.7	1.4	25.5	0.1	1.8	0.0	0.0
November 24	8	9.3	6.4	68.8	1.1	11.8	1.8	19.4	0.0	0.0
December 1	9	10.5	9.7	92.4	0.7	6.7	0.1	0.9	0.0	0.0
December 8	10	11.0	7.2	65.5	2.5	22.7	1.0	9.1	0.3	2.7
December 15	11	13.9	10.0	72.0	2.1	15.1	1.6	11.5	0.2	1.4
December 22	12	9.6	5.4	56.3	2.9	30.2	0.7	7.3	0.6	6.2
December 29	13	9.8	7.3	74.5	0.4	4.1	2.1	21.4	0.0	0.0
January 5	14	7.4	4.2	56.8	2.5	33.8	0.0	0.0	0.7	9.4
January 12	15	10.0	5.0	50.0	3.3	33.0	1.4	14.0	0.3	3.0
January 19	16	8.7	5.7	65.5	1.7	19.5	1.2	13.8	0.1	1.2
January 26	17	9.5	7.1	74.7	1.5	15.8	0.7	7.4	0.2	2.1
February 2	18	10.9	6.3	57.8	2.8	25.7	1.5	13.8	0.3	2.7
February 9	19	12.8	7.1	55.5	3 3	25.8	2.0	15.6	0.4	3.1
February 16	20	18.8	11.0	58.5	2.2	11.7	3.0	16.0	2.6	13.8
February 23	21	24.0	15.2	63.4	3.8	15.8	3.6	15.0	1.4	5.8
March 2	22	31.8	21.3	67.0	6.7	21.1	2.3	7.2	1.5	4.7
March 9	23	29.5	17.4	59.0	6.3	21.3	2.8	9.5	3.0	10.2
March 16	24	37.0	27.8	75.1	3.9	10.5	4.5	12.2	0.8	2.2
March 23	25	51.2	34.5	67.4	7.8	15.2	4.4	8.6	4.5	8.8
March 30	26	70.1	46.2	65.9	12.0	17.1	6.0	8.6	5.9	8.4
April 6	27	34.7	25.5	73.5	7.5	21.6	1.7	4.9	0.0	0.0
April 13	28	28.6	18.7	65.4	3.0	10.5	4.9	17.1	2.0	7.0
April 20	29	21.8	14.0	64.2	4.8	22.0	3.0	13.8	0.0	0.0
April 27	30	5.1	8.3	55.0	6.8	45.0	0.0	0.0	0.0	0.0

Source of data: Compiled and computed from shippers' and carriers' records.

TABLE 16

PRICES OF ARTICHOKES IN NEW YORK, CHICAGO, BOSTON, PHILADELPHIA, LOS ANGELES, AND SAN FRANCISCO, 1929–30
(In dollars per 40-pound box)

Week beginning	Week of season	New York			Chicago			Boston			Philadelphia			Los Angeles			San Francisco		
		Best quality	Poorest quality	Average	Best quality	Poorest quality	Average	Best quality	Poorest quality	Average	Best quality	Poorest quality	Average	Best quality	Poorest quality	Average	Best quality	Poorest quality	Average
October 28	1	4.38	3.63	4.01	5.00	4.25	4.63	3.67	3.00	3.33	4.00	3.00	3.50	4.31	3.47	3.89	3.25	2.00	2.63
November 4	2	4.50	3.75	4.13	4.50	4.00	4.25	4.50	4.00	4.25	4.00	3.00	3.50	4.68	3.73	4.21	3.31	2.50	2.91
November 11	3	4.38	3.83	4.11	4.63	4.25	4.44	4.50	4.00	4.25	4.13	3.38	3.76	4.57	3.28	3.93	3.56	2.63	3.10
November 18	4	5.00	4.25	4.63	5.75	4.75	5.25	5.00	4.50	4.75	5.00	3.50	4.25	5.59	4.03	4.81	4.00	2.88	3.44
November 25	5	5.33	4.50	4.92	6.63	4.75	5.69	5.33	4.75	5.04	5.50	4.75	5.13	5.88	3.75	4.82	3.88	2.50	3.19
December 2	6	5.25	4.17	4.71	5.81	4.67	5.24	4.00	3.50	3.75	5.50	5.00	5.25	5.75	4.60	5.18	4.25	2.63	3.44
December 9	7	5.00	3.63	4.32	6.00	4.94	5.47	4.50	3.75	4.13	5.75	5.00	5.38	5.15	4.25	4.70	4.25	2.88	3.57
December 16	8	5.33	3.88	4.61	6.08	5.19	5.64	5.00	4.00	4.50	5.00	4.50	4.75	5.14	4.05	4.60	4.07	2.75	3.41
December 23	9	7.00	6.00	6.50	6.00	5.00	5.50	5.00	5.00	5.00	.....	.....	.....	4.96	3.79	4.38	3.88	2.75	3.32
December 30	10	6.33	5.06	5.70	6.00	5.25	5.63	5.50	5.00	5.25	6.00	5.00	5.50	5.57	4.86	5.22	4.07	2.75	3.41
January 6	11	5.69	4.12	4.91	6.75	5.67	6.21	5.50	5.25	5.38	.....	.....	.....	6.13	5.10	5.62	3.94	2.50	3.22
January 13	12	5.75	5.06	5.41	6.50	4.75	5.63	5.50	5.00	5.25	5.75	5.50	5.63	5.72	4.19	4.96	4.75	2.75	3.75
January 20	13	5.33	2.25	3.79	6.25	4.50	5.38	5.00	3.00	4.00	5.50	5.00	5.25	7.20	5.60	6.40	4.75	2.75	3.75
January 27	14	4.50	1.00	2.75	6.00	4.50	5.25	3.50	1.75	2.63	4.50	3.33	3.93	4.88	3.45	4.17	3.94	2.38	3.16
February 3	15	4.83	2.83	3.83	7.00	4.00	5.50	4.00	2.00	3.00	5.00	3.83	4.42	4.39	3.15	3.77	3.38	2.00	2.69
February 10	16	4.83	3.17	4.00	6.25	4.25	5.25	5.00	4.50	4.75	5.50	4.50	5.00	4.25	3.45	3.85	2.94	1.50	2.22
February 17	17	4.31	3.50	3.91	5.25	4.25	4.75	5.50	4.88	5.19	5.50	4.50	5.00	3.75	2.45	3.10	2.38	1.38	1.88
February 24	18	3.38	2.33	2.86	4.25	3.25	3.75	4.33	2.75	3.54	4.50	3.50	4.00	3.79	2.47	3.13	2.38	1.50	1.94
March 3	19	3.25	1.94	2.60	4.00	3.00	3.50	3.44	2.17	2.81	4.00	2.25	3.13	4.53	3.18	3.86	2.69	1.75	2.22
March 10	20	3.18	2.42	2.80	3.75	3.00	3.38	3.25	2.50	2.88	3.63	2.83	3.23	2.84	2.00	2.42	2.00	1.00	1.50
March 17	21	3.06	2.13	2.60	3.63	3.13	3.38	3.33	2.50	2.92	3.63	2.88	3.26	2.33	1.83	2.08	1.94	1.25	1.60
March 24	22	3.25	2.19	2.72	3.63	3.13	3.38	3.31	2.50	2.91	3.25	2.63	2.94	2.18	1.58	1.88	2.44	0.88	1.66
March 31	23	2.92	2.44	2.68	3.00	2.50	2.75	3.00	2.25	2.63	3.25	2.56	2.91	1.43	0.78	1.11	0.88	0.50	0.69
April 7	24	1.75	1.33	1.54	2.00	1.75	1.88	2.00	1.50	1.75	2.50	1.50	2.00	1.38	0.68	1.03	1.00	0.50	0.75
April 14	25	1.38	1.08	1.23	1.38	1.13	1.26	1.25	1.13	1.19	1.45	1.00	1.23	1.50	0.78	1.14	1.00	0.50	0.75
April 21	26	1.58	1.13	1.36	1.25	1.00	1.13	1.25	1.00	1.13	1.25	1.00	1.13	1.75	1.08	1.42	1.00	0.50	0.75
April 28	27	1.50	1.00	1.25	1.92	1.38	1.65	1.25	1.00	1.13	1.25	0.88	1.07	1.88	1.28	1.58	0.96	0.50	0.73

Source of data: Compiled from the Federal-State Market News Service. Artichokes. Semiweekly issues. San Francisco. (Mimeo.)

TABLE 17

PRICES OF ARTICHOKES IN NEW YORK, CHICAGO, BOSTON, PHILADELPHIA, LOS ANGELES, AND SAN FRANCISCO, 1930–31
(In dollars per 40-pound box)

Week beginning	Week of season	New York			Chicago			Boston			Philadelphia			Los Angeles			San Francisco		
		Best quality	Poorest quality	Average	Best quality	Poorest quality	Average	Best quality	Poorest quality	Average	Best quality	Poorest quality	Average	Best quality	Poorest quality	Average	Best quality	Poorest quality	Average
October 6	1	3.25	2.63	2.94	3.00	2.25	2.63	3.25	2.75	3.00	3.00	3.00	3.00	2.85	1.50	2.18	2.50	1.45	1.98
October 13	2	3.13	2.17	2.65	3.08	2.58	2.83	3.00	3.00	3.00	2.75	2.50	2.63	3.25	1.65	2.45	2.50	1.50	2.00
October 20	3	3.00	2.38	2.69	3.08	2.25	2.67	3.33	2.88	3.11	2.67	2.08	2.38	3.30	2.10	2.70	2.50	1.50	2.00
October 27	4	3.00	2.31	2.66	2.88	2.50	2.69	2.63	2.25	2.44	2.38	2.13	2.26	3.10	1.85	2.48	2.50	1.75	2.13
November 3	5	3.25	2.00	2.63	3.13	2.75	2.94	2.00	2.00	2.00	.....	.....	.....	2.70	1.20	1.95	2.50	1.75	2.13
November 10	6	4.25	2.25	3.25	3.50	2.00	2.75	1.25	0.75	1.00	2.50	2.25	2.38	4.38	2.50	3.44	3.06	2.00	2.53
November 17	7	4.58	2.50	3.54	4.25	2.83	3.54	2.75	2.75	2.75	.....	.....	.....	4.10	2.15	3.13	3.70	2.00	2.85
November 24	8	5.63	3.06	4.35	5.08	2.88	3.98	3.50	3.50	3.50	.....	.....	.....	4.50	2.92	3.71	4.06	2.25	3.16
December 1	9	6.38	3.06	4.72	5.50	3.17	4.34	3.00	3.00	3.00	.....	.....	.....	4.85	2.95	3.90	4.15	2.50	3.33
December 8	10	6.38	2.75	4.57	6.00	5.00	5.50	5.00	3.50	4.25	.....	.....	.....	4.90	4.15	4.53	4.30	2.90	3.60
December 15	11	5.67	3.00	4.34	6.25	2.15	4.20	3.67	2.50	3.09	.....	.....	.....	4.80	3.40	4.10	4.30	3.00	3.65
December 22	12	5.83	2.88	4.36	6.00	4.25	5.13	4.00	3.50	3.75	4.75	3.75	4.25	4.17	2.92	3.55	4.83	3.00	3.92
December 29	13	4.83	2.81	3.82	5.25	4.25	4.75	4.75	4.00	4.38	.....	.....	.....	5.81	3.19	4.50	4.94	1.63	3.29
January 5	14	4.50	3.00	3.75	5.00	3.42	4.21	5.33	4.33	4.83	.....	.....	.....	5.95	3.60	4.78	4.80	1.50	3.15
January 12	15	5.50	3.13	4.32	5.50	4.33	4.92	4.25	3.75	4.00	4.17	3.00	3.59	5.25	2.10	3.68	5.25	2.05	3.65
January 19	16	5.00	3.50	4.25	6.50	4.75	5.63	2.00	2.00	2.00	.....	.....	.....	6.15	3.80	4.98	4.80	2.40	3.60
January 26	17	5.50	3.38	4.44	5.50	3.17	4.34	6.00	2.50	4.25	5.00	3.00	4.00	4.80	3.10	3.95	3.85	1.95	2.90
February 2	18	5.83	3.83	4.83	5.00	3.75	4.38	6.25	3.08	4.67	.....	.....	.....	4.00	2.75	3.38	3.15	1.25	2.20
February 9	19	5.50	3.67	4.59	4.58	2.94	3.76	4.00	1.88	2.94	5.00	3.75	4.38	3.80	2.95	3.38	2.81	1.50	2.16
February 16	20	4.75	3.17	3.96	3.75	3.38	3.57	4.17	3.17	3.67	4.50	3.33	3.92	3.40	2.70	3.05	2.35	1.50	1.93
February 23	21	4.00	3.25	3.63	3.83	3.08	3.46	3.25	2.25	2.75	3.25	2.38	2.82	3.06	2.13	2.60	2.25	1.38	1.82
March 2	22	3.38	2.75	3.07	3.50	3.00	3.25	3.50	2.50	3.00	3.50	2.75	3.13	2.45	1.80	2.13	2.15	1.00	1.58
March 9	23	3.38	3.00	3.19	3.38	3.25	3.32	4.00	3.50	3.75	3.75	3.25	3.50	2.25	1.65	1.95	1.75	1.00	1.38
March 16	24	3.25	2.83	3.04	3.00	3.00	3.00	3.50	3.25	3.38	3.75	3.13	3.44	1.95	1.20	1.58	1.58	1.00	1.29
March 23	25	3.13	2.63	2.88	2.75	2.75	2.75	3.25	3.00	3.13	3.50	2.63	3.07	1.75	0.60	1.18	1.38	0.75	1.07
March 30	26	2.33	1.88	2.11	2.25	1.92	2.09	2.25	1.75	2.00	2.50	2.25	2.38	1.85	0.77	1.31	1.22	0.55	0.89
April 6	27	2.50	2.00	2.25	1.63	1.38	1.51	2.08	1.75	1.91	2.50	2.00	2.25	1.65	0.70	1.18	1.25	0.50	0.88
April 13	28	2.25	1.75	2.00	1.50	1.38	1.44	2.08	1.75	1.91	2.17	1.88	2.03	1.75	0.55	1.15	1.44	0.50	0.97
April 20	29	2.13	1.25	1.69	2.00	1.50	1.75	1.75	1.00	1.38	2.00	1.50	1.75	2.15	0.95	1.55	2.15	1.00	1.58
April 27	30	2.25	1.38	1.82	2.50	1.63	2.07	3.00	2.50	2.75	.....	.....	.....	2.15	1.05	1.60	1.95	0.70	1.33

Source of data: Compiled from the Federal-State Market News Service. Artichokes. Semiweekly issues. San Francisco. (Mimeo.)

TABLE 18

WEEKLY ARRIVALS, CARRYOVER, AND SUPPLY OF ARTICHOKES IN NEW YORK CITY, 1929–30

(In carloads of 504 boxes)

Week beginning	Week of season	Carryover from the previous week	Arrivals	Supply	Unloads	Carryover to the next week
		1	*2*	*3*	*4*	*5*
October 28	1	8.3	7.5	15.8	6.5	9.3
November 4	2	9.3	7.9	17.2	9.5	7.7
November 11	3	7.7	10.4	18.1	10.5	7.6
November 18	4	7.6	7.3	14.9	7.5	7.4
November 25	5	7.4	7.7	15.1	4.5	10.6
December 2	6	10.6	6.9	17.5	9.0	8.5
December 9	7	8.5	7.2	15.7	6.0	9.7
December 16	8	9.7	9.1	18.8	7.5	11.3
December 23	9	11.3	5.2	16.5	5.5	11.0
December 30	10	11.0	9.5	20.5	7.0	13.5
January 6	11	13.5	9.7	23.2	6.0	17.2
January 13	12	17.2	5.9	23.1	9.5	13.6
January 20	13	13.6	7.9	21.5	9.0	12.5
January 27	14	12.5	4.0	16.5	6.0	10.5
February 3	15	10.5	6.2	16.7	12.0	4.7
February 10	16	4.7	10.1	14.8	7.0	7.8
February 17	17	7.8	14.6	22.4	13.0	9.4
February 24	18	9.4	25.9	35.3	21.5	13.8
March 3	19	13.8	35.6	49.4	28.0	21.4
March 10	20	21.4	25.8	47.2	26.5	20.7
March 17	21	20.7	27.4	48.1	23.0	25.1
March 24	22	25.1	26.2	51.3	19.5	31.8
March 31	23	31.8	39.9	71.7	28.0	43.7
April 7	24	43.7	82.0	125.7	55.0	70.7
April 14	25	70.7	66.3	137.0	59.0	78.0
April 21	26	78.0	19.7	97.7	20.0	77.7
April 28	27	77.7	7.7	85.4	17.5	67.9

Sources of data:

Col. 1: From col. 5 lagged one week.
Col. 2: Compiled from shippers' and carriers' records.
Col. 3: Computed from cols. 1 and 2.
Col. 4: From the New York Daily Fruit Reporter, daily issues. When part cars were reported as unloaded they were counted as one-half carloads.
Col. 5: Difference between cols. 3 and 4.

TABLE 19

WEEKLY ARRIVALS, CARRYOVER, AND SUPPLY OF ARTICHOKES IN NEW YORK CITY, 1930–31

(In carloads of 504 boxes)

Week beginning	Week of season	Carryover from the previous week	Arrivals	Supply	Unloads	Carryover to the next week
		1	*2*	*3*	*4*	*5*
October 6	1	14.8	19.2	34.0	8.0	26.0
October 13	2	26.0	16.7	42.7	16.0	26.7
October 20	3	26.7	16.0	42.7	10.5	32.2
October 27	4	32.2	6.8	39.0	13.5	25.5
November 3	5	25.5	7.2	32.7	14.5	18.2
November 10	6	18.2	8.6	26.8	14.0	12.8
November 17	7	12.8	4.0	16.8	11.5	5.3
November 24	8	5.3	6.4	11.7	5.0	6.7
December 1	9	6.7	9.7	16.4	6.5	9.9
December 8	10	9.9	7.2	17.1	8.5	8.6
December 15	11	8.6	10.0	18.6	9.0	9.6
December 22	12	9.6	5.4	15.0	7.5	7.5
December 29	13	7.5	7.3	14.8	7.5	7.3
January 5	14	7.3	4.2	11.5	7.0	4.5
January 12	15	4.5	5.0	9.5	7.0	2.5
January 19	16	2.5	5.7	8.2	8.0	0.2
January 26	17	0.2	7.1	7.3	6.5	0.8
February 2	18	0.8	6.3	7.1	6.5	0.6
February 9	19	0.6	7.1	7.7	6.0	1.1
February 16	20	1.1	11.0	12.1	12.0	0.1
February 23	21	0.1	15.2	15.3	13.0	2.3
March 2	22	2.3	21.3	23.6	20.0	3.6
March 9	23	3.6	17.4	21.0	20.0	1.0
March 16	24	1.0	27.8	28.8	21.0	7.8
March 23	25	7.8	34.5	42.3	33.0	9.3
March 30	26	9.3	46.2	55.5	34.5	21.0
April 6	27	21.0	25.5	46.5	15.5	31.0
April 13	28	31.0	18.7	49.7	19.5	30.2
April 20	29	30.2	14.0	44.2	17.5	26.7
April 27	30	26.7	8.3	35.0	17.0	18.0

Sources of data:

Col. 1: From col. 5 lagged one week.
Col. 2: Compiled from shippers' and carriers' records.
Col. 3: Computed from cols. 1 and 2.
Col. 4: From the New York Daily Fruit Reporter, daily issues. When part cars were reported as unloaded they were counted as one-half carloads.
Col. 5: Difference between cols. 3 and 4.

TABLE 20

Prices of Various Vegetables in New York, 1929–30 Artichoke Season

Week beginning	Week of season	Lettuce, in dollars per California crate*	Broccoli, in dollars per California pea crate*	Cauliflower, in dollars per California crate*	Beans, in dollars per Florida hamper*	Celery, in dollars per New York crate*	Peas, in dollars per California pea crate*	Spinach, in dollars per Texas hamper*
		1	*2*	*3*	*4*	*5*	*6*	*7*
October 28	1	2.18	3.33	1.74	3.50	2.50	7.50	0.75
November 4	2	2.97	3.50	2.19	4.50	3.50	9.00	0.75
November 11	3	2.68	3.50	1.63	5.00	3.25	10.50	0.75
November 18	4	3.83	3.65	2.17	7.00	3.50	10.00	0.85
November 25	5	4.04	3.58	1.88	5.50	3.50	10.50	0.85
December 2	6	4.05	4.20	2.70	3.50	3.50	9.50	1.00
December 9	7	4.65	5.66	2.43	2.75	4.00	9.00	1.25
December 16	8	4.68	3.98	2.00	2.50	3.75	7.75	0.75
December 23	9	5.75	3.06	1.83	2.75	3.50	6.00	1.00
December 30	10	5.25	2.53	1.75	3.00	3.50	4.00	1.25
January 6	11	5.00	2.84	2.08	4.50	3.00	4.75	1.25
January 13	12	5.50	2.84	2.38	5.50	2.00	4.75	1.25
January 20	13	4.95	2.86	2.35	5.50	2.50	4.00	1.75
January 27	14	4.68	2.66	1.88	5.50	1.75	4.25	1.50
February 3	15	3.50	3.36	1.38	6.50	2.75	4.50	1.00
February 10	16	3.66	3.43	1.31	5.50	2.75	4.50	1.00
February 17	17	2.86	3.40	1.44	7.50	2.75	4.75	.....
February 24	18	2.55	3.55	1.72	6.00	2.50	.....	.....
March 3	19	2.25	5.23	2.05	6.00	2.50	4.50	0.75
March 10	20	2.48	6.50	2.18	5.50	2.50	6.25	0.75
March 17	21	3.43	6.25	2.56	7.00	3.00	7.50	1.00
March 24	22	2.83	6.50	2.40	8.50	3.50	8.50	0.75
March 31	23	2.13	6.57	1.88	8.00	3.75	8.25	1.00
April 7	24	1.98	4.25	1.80	6.00	3.75	6.50	1.25
April 14	25	1.96	3.63	1.85	.....	4.00	4.25	1.00
April 21	26	4.90	6.00	1.84	.....	3.75	4.00	0.75
April 28	27	4.55	.....	2.13	.....	5.00	.....	0.75

* Weights vary considerably because packages are not uniform. Exact weights could not be determined.

Sources of data:

Compiled from the New York Daily Fruit Reporter, daily issues.
Cols. 1, 2, and 3: Average of daily prices for the week for bulk of sales of best quality.
Cols. 4, 5, 6, and 7: Monday's prices for bulk of sales of best quality.

TABLE 21

PRICES OF VARIOUS VEGETABLES IN NEW YORK, 1930–31 ARTICHOKE SEASON

Week beginning	Week of season	Lettuce, in dollars per California crate*	Broccoli, in dollars per California pea crate*	Cauliflower, in dollars per California crate*	Beans, in dollars per Florida hamper*	Celery, in dollars per New York crate*	Peas, in dollars per California pea crate*	Spinach, in dollars per Texas hamper*
		1	*2*	*3*	*4*	*5*	*6*	*7*
October 6	1	3.43	2.31	2.30	1.75	1.50	4.00	0.75
October 13	2	3.75	2.50	1.72	3.00	1.50	4.25	.....
October 20	3	4.18	2.58	1.99	1.75	1.87	.....	.....
October 27	4	4.20	4.13	2.60	2.75	1.75	4.00	.....
November 3	5	3.16	4.71	2.52	2.50	2.00	.....	.....
November 10	6	3.33	4.30	2.15	2.00	2.25	6.50	1.00
November 17	7	3.88	3.89	1.70	1.75	2.00	6.25	1.00
November 24	8	3.92	3.50	1.63	1.50	2.50	4.75	1.00
December 1	9	4.23	3.25	1.53	3.25	2.50	5.25	1.12
December 8	10	3.78	3.72	1.50	3.00	2.25	4.50	0.75
December 15	11	3.75	3.14	1.61	5.00	2.25	5.00	0.75
December 22	12	4.17	2.65	1.77	6.50	2.50	5.00	0.50
December 29	13	2.56	2.56	2.15	8.50	3.25	6.00	0.50
January 5	14	2.70	2.78	2.36	9.50	3.00	8.00	1.00
January 12	15	2.68	2.74	2.17	8.50	2.50	9.25	1.00
January 19	16	2.73	2.87	2.00	7.50	3.25	9.50	1.12
January 26	17	2.75	2.42	1.88	8.00	3.00	9.00	0.85
February 2	18	2.71	2.47	1.85	8.50	3.50	7.75	1.40
February 9	19	2.83	2.19	1.50	8.00	3.50	6.00	1.00
February 16	20	3.25	2.44	1.69	6.50	3.75	5.50	1.00
February 23	21	3.00	2.51	1.72	6.00	3.50	4.75	0.75
March 2	22	3.70	2.52	1.90	6.00	3.75	5.00	0.90
March 9	23	3.07	3.50	2.13	6.00	3.50	5.50	0.90
March 16	24	3.36	4.10	2.02	5.50	3.50	5.50	1.00
March 23	25	2.90	3.61	1.83	5.00	3.75	6.00	1.12
March 30	26	2.85	3.29	1.85	3.50	3.75	5.00	1.12
April 6	27	2.58	3.00	2.00	4.50	3.75	5.00	1.10
April 13	28	2.17	2.88	2.05	4.00	2.50	4.50	0.90
April 20	29	6.10	2.55	2.30	4.50	2.75	4.25	0.75
April 27	30	4.28	2.23	2.51	5.00	3.00	2.50	0.75

* Weights vary considerably because packages are not uniform. Exact weights could not be determined.

Sources of data:
Compiled from the New York Daily Fruit Reporter, daily issues.
Cols. 1, 2, and 3: Average of daily prices for the week for bulk of sales of best quality.
Cols. 4, 5, 6, and 7: Monday's prices for bulk of sales of best quality.

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